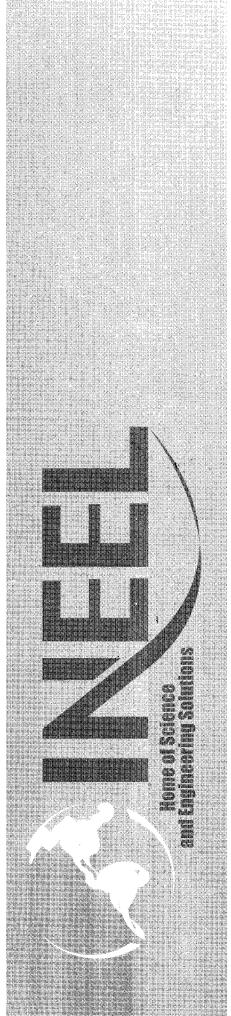
Waste Management Plan for Test Area North Final Groundwater Remediation Operable Unit 1-07B



### Waste Management Plan for Test Area North Final Groundwater Remediation Operable Unit 1-07B

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Prepared by Bechtel BWXT Idaho, LLC for the
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### **ABSTRACT**

This waste management plan identifies the waste types and quantities expected to be generated during the implementation of remedial action as addressed in the Record of Decision for Operable Unit 1-07B. Operable Unit 1-07B is located at Test Area North on the Idaho National Engineering and Environmental Laboratory (INEEL). This plan addressed the various waste streams sources and classification, and gives guidance for their disposition. It also addresses the actions necessary to characterize and classify a new waste stream not previously identified. Each type of waste will be managed in accordance with the INEEL M&O Contractor's procedures, as well as state and federal regulations.

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### **ACRONYMS**

AOC area of contamination

ARAR applicable or relevant and appropriate requirement

ASTU air stripper treatment unit

BBWI Bechtel BWXT Idaho, LLC

CERCLA Comprehensive Environmental Response,

Compensation, and Liability Act

CFR Code of Federal Regulations

CWSA CERCLA waste storage area

CWSU CERCLA waste storage unit

DCE dichloroethene

DOE-ID U.S. Department of Energy Idaho Operations Office

DOT U.S. Department of Transportation

EPA U.S. Environmental Protection Agency

ER environmental restoration

ESD explanation of significant differences

GWTF Groundwater Treatment Facility

IDEQ Idaho Division of Environmental Quality

INEEL Idahó National Engineering and Environmental

Laboratory

ISB in situ bioremediation

ISCO in situ chemical oxidation

IWTS interim waste tracking system

LDR land disposal restriction

MCP management control procedure

MWSF Mixed Waste Storage Facility

MWTF Mixed Waste Treatment Facility

NLCID no-longer contained in determination

NA natural attenuation

NPTF new pump and treat facility

OU operable unit

PCB polychlorinated biphenyl

PCE tetrachloroethene

PPE personal protective equipment

RAWP remedial action work plan

RCRA Resource Conservation and Recovery Act

RMA radioactive materials area

RRWAC Reusable Property, Recyclable Materials, and Waste

Acceptance Criteria

RWMC Radioactive Waste Management Complex

SAA satellite accumulation area

SMO Sample Management Office

SOP standard operating procedure

SOW statement of work

TAN Test Area North

TCE trichloroethene

TSDF treatment, storage, and disposal facility

VOC volatile organic compounds

WGI waste generator interface

WGS waste generator services

WMP waste management plan

WMPPP waste minimization and pollution prevention plan

WROC Waste Reduction Operations Complex

### Waste Management Plan for Test Area North Final Groundwater Remediation Operable Unit 1-07B

### 1. PURPOSE AND OBJECTIVES

The purpose of this waste management plan (WMP) is to identify waste streams associated with the Operable Unit (OU) 1-07B remedial action and provide a roadmap and reference to the applicable waste management requirements that are contained in Bechtel BWXT Idaho, LLC (BBWI) company and Environmental Restoration Program documents. The scope of this plan covers industrial, conditional industrial, hazardous, low-level radioactive, and mixed waste generated as a result of the remedial activities associated with OU 1-07B. This plan is supportive of, and subordinate to, the Waste Certification Plan for the Environmental Restoration Program (Idaho National Engineering and Environmental Laboratory [INEEL] 1996), the INEEL Reusable Property, Recyclable Materials, and Waste Acceptance Criteria (U.S. Department of Energy Idaho Operations Office [DOE-ID] 1999), hereinafter referred to as the RRWAC, and the applicable BBWI management control procedures (MCPs). The overall scope of OU 1-07B remediation activities are covered in the Phase B Remedial Action Work Plan (RAWP) (DOE-ID 1998), Phase C RAWP (DOE-ID 2001a), Phase C Operations and Maintenance Plan (DOE-ID 2001b), and other activity specific work plans. These plans will identify the wastes generated during remediation activities, relate these wastes to the waste streams in this WMP, identify any new waste streams, and refer to this WMP for waste management requirements.

The waste management issues addressed in this plan include:

- Methodologies for identifying and characterizing wastes generated during the remedial action
- Handling sample waste
- Segregating wastes
- Packaging various waste types
- Labeling and inspecting waste types
- Storage areas
- Record keeping and reporting requirements
- Transporting and disposing requirements.

Support to the OU 1-07B project for waste management activities will be provided by INEEL Waste Generator Services (WGS). The WGS personnel will provide this support in accordance with a memorandum of agreement between Environmental Restoration (ER) and WGS, and a task agreement with the OU 1-07B project.

The process and requirements for utilizing support from WGS for waste characterization, storage, treatment, and disposal are covered in the following BBWI waste type specific MCPs:

- MCP-62 Waste Generator Services "Low-Level Waste Management"
- MCP-63 Waste Generator Services "Conditional Industrial Waste Management"
- MCP-69 Waste Generator Services "Hazardous Waste Management"
- MCP-70 Waste Generator Services "Mixed Low-Level Waste Management."

Waste is currently stored at OU 1-07B using two Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) waste storage units (CWSU) within the OU 1-07B CERCLA waste storage area (CWSA), which is a fenced area within the area of contamination (AOC). The explanation of significant differences (ESD) (INEEL 1997) defines the AOC as "... the area overlying and within the contaminated groundwater plume (i.e., detectable trichloroethene [TCE] concentrations greater than  $5 \mu g/L$ )." Waste is held in the CWSA pending disposition and/or transfer to one of the following waste management areas at the INEEL:

- Waste Reduction Operations Complex (WROC)
- Radioactive Waste Management Complex (RWMC)
- Mixed Waste Treatment Facility (MWTF)
- Or to an off-Site facility.

Since this is a CERCLA action, storage at the CWSA meets the substantive requirements of Resource Conservation and Recovery Act (RCRA) for temporary storage, except that the 90-day limit for storage is not applicable. The history behind managing these waste streams as RCRA-listed wastes is in the Section 7 of the Phase B RAWP (DOE-ID 1998).

Information related to the polychlorinated biphenyls (PCB) waste management is also contained in Section 7 of the Phase B RAWP (DOE-ID 1998). As addressed in the RAWP, PCB concentrations found to date are below regulatory concern and will be managed "as found." Therefore, management of PCBs is not addressed in this plan. If PCBs are found in concentrations above regulatory concern (50 mg/kg), this WMP will be revised.

Although this document is issued as a stand-alone document, it is intended to be used in conjunction with the Phase B RAWP (DOE-ID 1998) and the Phase C RAWP (DOE-ID 2001a).

### 2. WASTE STREAMS

### 2.1 Identification

Waste streams from the various activities associated with remediation of OU 1-07B are identified in Table 2-1. Table 2-2 gives a description of these waste streams. The generated waste streams are profiled and tracked in the interim waste tracking system (IWTS). These IWTS tracking numbers consist of a four-digit number followed by a letter suffix. The suffix indicates the current revision of the profile. The RRWAC (DOE-ID 1999a), requires that the waste profile be reviewed annually.

Waste streams are also identified as part of the U.S. Department of Energy Idaho Operations Office Idaho National Engineering Laboratory Waste Minimization and Pollution Prevention Awareness Plan (DOE-ID 1994), hereinafter referred to as the WMPPP, at the INEEL. These identifications for OU 1-07B consist of a 14 character alpha-numeric number that indicates the facility of origin, Test Area North (TAN), the OU (OU 1-07B), and a six digit sequential number.

Table 2-1 shows the correlation between the OU 1-07B waste stream identification, the IWTS profile number, and the WMPPP identification. Table 2-1 also associates the various OU 1-07B remedial activities with the solid waste categories. Waste categories, including industrial, hazardous low-level (radioactive), and mixed, are defined in the RRWAC. Nonhazardous, nonradioactive office and industrial waste streams do not carry a unique identification number. The Annual Site Treatment Plan Report (DOE-ID 1996) is used for OU 1-07B incinerable low-level mixed waste. As the remedial action continues, additional waste streams may be identified. Section 2.3 addresses the methodology to be followed when a new waste stream is identified.

### 2.2 Characterization

All wastes generated are characterized using both chemical and physical analysis of representative samples of the waste streams, as required by 40 Code of Federal Regulations (CFR) 264.13. Based on this characterization, hazardous waste determinations are performed that assign the appropriate U.S. Environmental Protection Agency (EPA) Waste Codes (40 CFR 262.11). After the hazardous waste determinations are completed, the IWTS profile number is assigned and the appropriate information entered into the tracking system. Guidance for completion of the hazardous waste determination, including the appropriate forms to be completed, is given in the applicable BBWI WGS MCP (Section 1). Completed hazardous waste determinations will be maintained for all waste streams as part of the profile package.

A hazardous waste determination uses two approaches to determine if the waste is characteristic waste: (1) process knowledge, including standard protocols for sampling and laboratory analysis that are not specialized RCRA methods and other equivalent regulatory approved methods, and (2) specialized RCRA sampling and analysis for some RCRA regulated materials. Process knowledge influences the amount of sampling and analysis required in order to characterize recyclable materials and waste. The 40 CFR 268 regulation addresses land disposal restrictions (LDRs) for hazardous waste. Additionally, INEEL specific requirements for treatment, storage, and disposal are addressed in the RRWAC.

Table 2-1. Operable Unit 1-07B remedial action waste streams.

OU 1-07B Waste Stream	IWTS Identification	OU 1-07B Identification	Pollution Prevention Identification	Non- Hazardous	Non- Radioactive	Low-Level Mixed Waste <sup>a</sup>	RCRA Listed	RCRA Characteristic <sup>b</sup>
Groundwater Treatment Facility Operations	atment Facility	Operations						
Spent Activated Carbon	1936	1-07B-005	TANOU107B00003			XXX	F001	
Multi-media Filter Sand		1-07B-006				XXX	F001	
Spent Ion Exchange Resin	1938	1-07B-007	TANOU107B00001			XXX	F001	
Bag Filters/Sludge	1935	1-07B-008	TANOU107B00002			XXX	F001	
Laboratory Waste	2331°	1-07B-010				XXX	F001	D002 <sup>d</sup>
Bag Filter Rings		1-07B-011				XXX	F001	
Personal Protective Equipment	1935	1-07B-021				XXX	F001	
Equipment Decontamination Liquid Residue		1-07B-024			•	XXX	F001	
Equipment Decontamination Solids Residue		1-07B-025				· XXX	F001	_
Miscellaneous Scrap Metal From System Modifications	2473	1-07B-026			·	XXX	F001	
1-07B General Waste Streams	iste Streams							
Office Waste				XXX	XXX			
Industrial Waste				XXX	XXX	•		

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OU 1-07B Waste Stream	IWTS Identification	OU 1-07B Identification	Pollution Prevention Identification	Non- Hazardous	Non- Radioactive	Low-Level Mixed Waste <sup>a</sup>	RCRA Listed	RCRA Characteristic <sup>b</sup>
Personnel Protective Equipment	1935	1-07B-021				XXX	F001	
Contaminated Groundwater		1-078-022				XXX	F001	
Technical Support Facility (TSF)-05 Sludge		1-07B-023				XXX	F001	
Equipment Decontamination Liquid Residue		1-07B-024				XXX	F001	
Equipment Decontamination Solid Residue		1-07B-025				XXX	F001	
Scrap Carbon and Stainless Steel		1-07B-026				XXX	F001	
Treated Groundwater		1-07B-027				See Note	See Note	
Well Drilling								
Covered by 1-07B general waste streams except as listed below.	eneral waste strea	ms except as						
Drill Cuttings Above the Saturated Zone				XXX	XXX	•		
Drill Cuttings Below Saturated Zone	2319	1-07B-031				XXX	F001	

H l	Table 2-1. (continued).	nued).							
	OU 1-07B Waste Stream	IWTS Identification	OU 1-07B Identification	Pollution Prevention Identification	Non- Hazardous	Non- Radioactive	Low-Level Mixed Waste	RCRA Listed	RCRA Characteristic <sup>b</sup>
	Drilling Containment Pad Material		1-07B-032				XXX	F001	
	TSF-05 Sludge Sampling and Surge and Stress	ampling and Su	rge and Stress						
<b>—</b>	Covered by 1-07B general waste streams except as listed below.	general waste streaı	ns except as						
-, 6	Sediment, Sand, and Sludge		I-07B-023	TANOU107B00002			XXX	F001	
_	Hydrogeological Studies	Studies							
_	Covered by 1-07B general waste streams except as listed below.	general waste streaı	ms except as						
2-4	Pumped Groundwater		1-07B-022				XXX	F001	
	in Situ Bloremediation Field Evaluation	lation Field Eval	luation						
-	Covered by 1-07B general waste streams except as listed below.	general waste strea	ms except as						
	In Situ Bioremediation (ISB) Field Evaluation Excess Samples #1		1-07B-041				XXX	F001	·
	ISB Field Lab Residuals #2 (carbon dioxide, iron, ammonia, phosphate, alkalinity, and bromide)		1-07B-042		•		XXX	F001	

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Identification
1-07B-044
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### ISB Air Stripper Treatment Unit (ASTU)

Covered by 1-07B general waste streams. No ASTU specific waste streams anticipated.

# Groundwater Monitoring and Natural Attenuation Field Evaluation

Covered by 1-07B general waste streams except as listed below.

Groundwater
Sampling Purge
Water

Returned,
Unaltered
Groundwater
Samples

F001

XXX

F001

XXX

## New Pump and Treat Facility (NPTF) Operations

Covered by 1-07B general waste streams except as listed below.

listed below.

Treated water

Air effluent

XXX XXX

Table 2-1. (continued).

RCRA	Characteristic <sup>b</sup>
RCRA	Listed
Low-Level	Mixed Waste
Non-	Radioactive
Non-	Hazardous
Pollution Prevention	Identification
OU 1-07B	Identification
IWTS	Identification
OU 1-07B	Waste Stream

If the waste does not contain radionuclides above detection limits, the waste will not be low-level mixed waste. æj

b. RCRA characteristic wastes per 40 CFR 261.24.

c. Aqueous samples preserved in nitric acid residue.

d. If the pH <2.0, then wastes are characteristic D002 waste.

RCRA-F001 listed waste code for ASTU treated water was removed via a no-longer contained-in determination (NLCID) as addressed in Section 2.5. The treated water from Treated water from the Groundwater Treatment Facility (GWTF) is low-level mixed waste, RCRA-F001 listed. The treated water from the ASTU is low-level waste. The the NPTF will be nonhazardous. The RCRA-F001 listed waste code for NPTF treated water will be removed via a NLCID as addressed in Section 2.5. نه

f. See hazardous waste determination for characteristic waste codes.

Table 2-2.	Waste	stream	descri	ptions.
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Waste Stream Number	Waste Stream Description
	Groundwater Treatment Facility (GWTF) Waste Streams
1-07B-001	GWTF Surge Tank Solids—Solids were expected to be introduced into the surge tank during regular operations. Current data indicates that these solids have not accumulated to the extent originally envisioned. These solids are sludge and, if accumulated, will be back-washed to a bag filter and included with Waste Stream 1-07B-008.
1-07B-002	GWTF Verification Tank Solids—Very minor residue that was expected in the verification tank as part of regular operations. Current data indicates that these solids have not accumulated to the extent originally envisioned. These solids are sludge and, if accumulated, will be back-washed to a bag filter and included with Waste Stream 1-07B-008.
1-07B-003	GWTF Backwash Tank Solids—Solids removed from the backwash tank cleaning and general maintenance operation. Current data indicates that these solids have not accumulated to the extent originally envisioned. These solids are sludge and, if accumulated, will be back-washed to a bag filter and included with Waste Stream 1-07B-008.
1-07B-004	GWTF Air Stripper Sump Solids—Solids accumulated in the sump of the air stripper during regular operations. Current data indicates that these solids have not accumulated to the extent originally envisioned. These solids are sludge and, if accumulated, will be back-washed to a bag filter and included with Waste Stream 1-07B-008.
1-07B-005	GWTF Spent Carbon—Any activated carbon that becomes contaminated with TCE, tetrachloroethene (PCE), dichloroethene (DCE), and other volatile organic compounds (VOCs). Each adsorber bed contains approximately 680 kg (1,500 lb) of activated carbon.
1-07B-006	GWTF Multi-media Filter—The multi-media filter is backwashed periodically to remove contaminants. The contaminant material removed is collected in the bag filter and included with Waste Stream 1-07B-008. Eventually the multi-media filter materials will become contaminated with low-level mixed waste due to usage. When back-washing is not sufficient to remove the contaminant material, the contaminated media waste will be dewatered, drummed, and stored at the CWSA pending final disposition through a hazardous waste determination.
1-07B-007	GWTF Spent Resin—Ion-exchange media (resin) is used to remove radionuclides from the groundwater. The media will require changing when ion exchange becomes ineffective. This material will be low-level mixed. The media will be dewatered, drummed, and stored at the CWSA pending final disposition through a hazardous waste determination.
1-07B-008	GWTF Bag Filters and Sludge—Bag filters collect fines and sludge from system operations. This material will be low-level mixed. The filters and solids from the filter will be dewatered, drummed, and stored at the CWSA pending final disposition through a hazardous waste determination. The metal rings from the bag filters will be removed and included in Waste Stream 1-07B-011.

Table 2-2. (continued).

Waste Stream Number	Waste Stream Description
1-07B-009	GWTF Personal Protective Equipment (PPE)—PPE is generated during maintenance of the process system including changing the activated carbon, changing the ion-exchange media, changing the bag filters, and conducting routine maintenance that requires opening portions of the system. This PPE is included in Waste Stream 1-07B-21.
1-07B-010	GWTF Laboratory Waste—Laboratory and sample residues are wastes generated during routine GWTF laboratory operations. These consist of PPE, liquid chemicals, samples, and other waste generated during sampling and analysis activities. Laboratory industrial (sanitary) waste is managed separately and is not included in this waste stream.
1-07B-011	GWTF Bag Filter Rings—Bag filter rings are steel rings within the bag filters that support the filters while in the filter housing. The steel rings are removed and segregated during bag filter change out.
1-07B-012	GWTF Scrap Metal—Miscellaneous scrap metal from system modifications consist of piping (both carbon and stainless steel) and valves. Numerous piping sections have been replaced throughout the facility and well discharge lines. This scrap metal is included in Waste Stream 1-07B-027.
1-07B-013 to 020	Not assigned.
	1-07B General Waste Streams
1-07B-021	PPE—PPE and wipes that have come into contact with contaminated groundwater and/or sludge during 1-07B remediation activities. Such activities include GWTF maintenance, Air Stripper Treatment Unit (ASTU) maintenance, New Pump and Treat Facility (NPTF) maintenance, groundwater sampling, well drilling, well pumping tests, treatability study tests, and equipment decontamination.
1-07B-022	Contaminated Groundwater—Contaminated groundwater from 1-07B remediation activities that has not been mixed with other liquid waste materials. Such activities include GWTF maintenance, ASTU maintenance, groundwater sampling, well drilling, well pumping tests, treatability study tests, and equipment decontamination. Unaltered groundwater samples are also included in this waste stream. This water may be processed through the GWTF, ASTU, or NPTF and reinjected into the aquifer.
1-07B-023	TSF-05 Sludge—Sludge, sand and sediment from well TSF-05 generated during TSF-05 sludge sampling and/or sludge removal activities. This also includes unaltered sludge samples returned from off-Site or on-Site laboratories.
1-07B-024	Equipment Decontamination Liquid Residue—Equipment decontamination liquid residue is that liquid from decontamination processes that contains other waste constituents besides contaminated groundwater (1-07B-022).
1-07B-025	Equipment Decontamination Solids Residue—Equipment decontamination solids residue is the residue that has been removed from equipment during the decontamination process that is not classified as TSF-05 sludge, drill cuttings, or otherwise fits any of the above waste stream descriptions.

Table 2-2. (continued).

Waste Stream Number	Waste Stream Description
1-07B-026	Scrap Carbon and Stainless Steel—Scrap carbon and stainless steel is generated from GWTF, ASTU, and NPTF treatment system modifications. This scrap material includes piping, valves, and other components that are removed during modifications to the treatment systems.
1-07B-027	Treated Groundwater—Treated groundwater is generated through the remedial action groundwater treatment process. Groundwater treatment facilities include the GWTF, ASTU, and NPTF. The treatment process removes VOCs. The ASTU and the NPTF remove VOCs to below MCLs. The GWTF reduces VOC concentrations. All treated groundwater is reinjected into the aquifer.
1-07B-028 to 030	Not Assigned.
	Well Drilling
1-07B-31	Drill Cuttings—Drill cuttings from below the saturated zone are the cuttings generated during drilling activities below the water table. These cuttings consist of fractured basalt and interbed sediments that are brought to land surface and contained in frac tanks. The high-pressure air from the drill rig forces the cuttings from the borehole to the surface where they are captured in the frac tank.
1-07B-032	Drilling Containment Pad Material—Drilling containment pad material consists of gravel and sand used in the construction of well drilling containment pads. Well drilling containment pads are constructed to provide containment of well drilling water that may leak from drill rig diverter seals.
1-07B-033 to 040	Not Assigned.
	Hydrogeological Study and Treatability Study Specific Waste Streams
1-07B-041	In Situ Bioremediation (ISB) Field Evaluation Excess Samples #1—ISB field evaluation excess samples are those groundwater samples collected during the field evaluation that are unaltered and not used. These groundwater samples are included in Waste Stream 1-07B-022.
1-07B-042	ISB Field Lab Residuals #2—ISB field lab residuals are analyzed samples, rinseate, and residue from the field laboratory analysis using field test kits. The analyses under this waste stream include carbon dioxide, iron, ammonia, phosphate, alkalinity, and bromide.
1-07B-043	ISB Field Lab Residuals #3—ISB field lab residuals are analyzed samples, rinseate, and residue from the field laboratory analysis using field test kits. The analyses under this waste stream include nitrate, chloride, and sulfate.
1-07B-044	ISB Field Lab Residuals #4—ISB field lab residuals are analyzed samples, rinseate, and residue from the field laboratory analysis using field test kits. The analyses under this waste stream include chemical oxidation demand. Light's solution for checking the performance of the Hydro Lab Platinum ORP electrode is also included.
	NPTF Waste Streams

Table 2-2. (continued).

Waste Stream Number	Waste Stream Description
1-07B-051	NPTF Treated Groundwater— Treated groundwater is generated through the remedial action groundwater treatment process. The NPTF removes VOCs to below MCLs and $1 \times 10^{-5}$ cumulative risk.

### 2.3 New Waste Stream

Any new wastes streams, not identified in Table 2-1, are required to have the waste projected to be generated, identified, and characterized; a hazardous waste determination completed and presented to the anticipated waste management organization (e.g., WROC waste generator interface [WGI]) for approval by that organization prior to generation. The hazardous waste determination becomes part of the profile package for that waste stream upon approval by the waste management organization. Guidance for completion of the hazardous waste determination, including the appropriate forms to be completed, are given in the applicable BBWI WGS MCP (Section 1). In addition, all identified waste management activities must be in accordance with the requirements of the waste certification plan for the ER program.

### 2.4 Predicted Waste Quantities

Historical records of waste generation during Groundwater Treatment Facility (GWTF) operations were reviewed, along with projected future operations, to estimate the quantity of each waste stream that may be generated each year for the next 5 years. Table 2-3 presents the estimated quantities of waste that will be generated during the next 5 years by each identified waste stream.

### 2.5 No-Longer Contained-In Determinations

As identified in the Phase B RAWP and the Phase C RAWP it was determined in April 1997 that the OU 1-07B contaminated groundwater contains the RCRA-listed waste TCE. For contaminated groundwater that contains low to nondetectable concentrations of listed wastes, a no-longer contained-in determination (NLCID) may be requested from the Idaho Division of Environmental Quality (IDEQ). If a NLCID request is approved by IDEQ, then the waste may be dispositioned in accordance with the delisting per the NLCID. A hazardous waste determination will be completed in such cases to document the disposition per the NLCID. The following NLCIDs have been requested and/or approved:

- NLCID for well drilling water from Wells TAN-47, 48, and 50 at 5 ppb—Approved
- NLCID for well drilling water, drill cuttings, and containment pad material—Approved
- NLCID for well drilling and development water—Approved
- NLCID for well drilling water, drill cuttings, and containment pad material for FY 00 well drilling—Approved
- NLCID for groundwater from Well ANP-8—Approved
- NLCID for In Situ Bioremediation Air Stripper Discharge —Approved
- NLCID for New Pump and Treat Facility Reinjected Groundwater—Approved.

The NLCIDs that have been approved are attached to this WMP in Appendix A. As pending or future NLCIDs are approved they will be added to Appendix A via a Document Action Request change to this WMP.

### 3. WASTE MANAGEMENT

The Waste Certification Program for the Environmental Restoration Program (INEEL 1996) discusses the overall strategy for management of waste generated as a result of the remediation efforts at the INEEL. The following discussions are intended to clarify these strategies as they apply to OU 1-07B.

Wastes generated during remedial activities will be segregated, containerized, labeled, and stored in accordance with the substantive requirements of RCRA. While sufficient quantities of waste are being accumulated to facilitate treatment and/or disposal, the waste will be characterized (as necessary), manifested (as required), and prepared for disposal.

### 3.1 Waste Minimization and Segregation

Waste minimization for this project is primarily achieved through design and planning to ensure efficient operations and to ensure that wastes are not generated unnecessarily. To the extent possible, only the contaminated portions of waste material will be discarded as regulated waste (e.g., separating soiled portions of PPE from clean portions).

The WMPPP addresses the efforts to be expended and the reports required to track waste generated at the INEEL. The WMPPP directs that the volume of waste generated during INEEL operations be reduced on an annual basis to achieve the ultimate goal of zero waste generated. The waste certification plan (INEEL 1996) contains copies of the WMPPP reports for 1996 and 1997. Activities associated with the OU 1-07B remedial action are intended to meet the requirements for waste minimization as addressed in the WMPPP.

Best management practice directs that all waste and PPE generated inside the controlled area for the remedial action will be managed as potentially contaminated low-level mixed waste or as RCRA-listed waste if they are not radioactively contaminated. Industrial wastes do not require segregation by type. Therefore, containers will be identified as industrial waste and maintained outside the controlled area for separate collection. Contaminated waste will be RCRA-listed or low-level mixed. Both types of contaminated waste will require segregation as either incinerable (e.g., wipes, PPE) or nonincinerable (e.g., drill cuttings), in anticipation of subsequent waste management. Containers for collection of contaminated waste will be clearly labeled to identify waste type and will be maintained inside the controlled area until removed for subsequent management. Waste segregation by type entails separation by source of contamination (e.g., mixed or RCRA-listed), and further separation to designate subsequent management/disposition (e.g., incinerable, compactible, free liquid containing).

### 3.2 Liquid Wastes

Any waste streams generated during the OU 1-07B remedial actions that contain free liquids will be decanted and the liquid collected. Purge water collected from OU 1-07B sampling activities will be transferred to the NPTF for processing. The free liquid will be stored in containers in the CWSUs pending completion of the hazardous waste determination. These liquids will then be managed in accordance with the hazardous waste determination.

### 3.3 Laboratory and Sample Waste

Laboratory and sample waste is managed in accordance with GWTF Standard Operating Procedure (SOP) LAB-001, "Laboratory Waste Disposal," and this WMP. Field laboratory waste generated during in situ bioremediation (ISB) field operations will be managed in accordance with this WMP. All other laboratory and sample waste sent off-site is managed in accordance with the statement of work (SOW) issued by the Sample Management Office (SMO) as part of the contract for the subcontracted laboratory and is discussed in greater detail below. Unaltered (unacidified) groundwater samples will be segregated from all other wastes to facilitate possible return to the source.

### 3.4 Packaging and Labeling

Containers used to store and transport hazardous waste must meet the requirements of 40 CFR 264, Subpart I. The RRWAC contains additional details concerning packaging and container conditions. Appropriate containers for RCRA-listed waste include 208-L (55-gal) drums and other suitable containers that meet the U.S. Department of Transportation (DOT) regulations on packaging (49 CFR 171, 173, 178, and 179) or RRWAC Sections 4.4, 4.5, and 4.6. Wooden boxes  $1.2 \times 1.2 \times 2.4$  m ( $4 \times 4 \times 8$  ft) and  $0.6 \times 1.2 \times 2.4$  m ( $2 \times 4 \times 8$  ft) may be used for sizable waste (e.g., piping, valves, drill cuttings, hoses). The WGI will be consulted to ensure the packaging is acceptable to the receiving facility.

Waste containers will be labeled with standard green and yellow CERCLA waste labels. The following information will be included on the containers:

- Unique bar code number
- Name of generating facility (e.g., OU 1-07B)
- Phone number of generator contact
- Listed or characteristic waste code(s)
- Waste package gross weight
- Maximum radiation level on contact and at 1 m in air
- Waste stream or material identification number as assigned by the receiving organization
- Other labels and markings as required by 49 CFR 172, Subparts D and E.

Any of the above information that is not known when the waste is labeled, may be added when the information is known (e.g., gross weight). The unique bar code serial number is used for tracking and is generated and controlled through IWITS. A new bar code will be affixed to each container when waste is first placed in the container.

Any waste shipped off the INEEL from OU 1-07B must be labeled in accordance with applicable DOT labels and markings (49 CFR 172). Additionally, waste labels must be visible, legibly printed or

stenciled, and placed so that a full set of labels and markings are visible. See RRWAC Section 4.4, 4.5, or 4.6 for additional labeling information.

The 1-07B SOP-11, "Waste Handling and Tracking and CERCLA Waste Storage Area Maintenance and Inspection," addresses labeling and tracking of all waste containers within the CWSA. The required information entered into the database for tracking includes:

- Waste container unique bar code number
- Waste description
- Physical properties
- Container type
- Generation date
- Waste volume
- Measured volume
- Container location
- Waste stream identification number
- Activity/type
- DOT classification
- EPA waste code(s)
- Gross weight of waste container
- Generation source
- Last inspection date
- Generator name
- Manifest number
- Transporter ID
- Date removed
- Notes, as appropriate.

Any of the above information that is not known when the waste is labeled, may be added when the information is known (e.g., transporter ID).

### 3.5 Storage and Inspection

Wastes will be stored in the CWSA at TAN. Solid wastes segregated as hazardous and/or mixed and placed in 208-L (55-gal) drums, will be stored in the CWSUs U-1 and U-2. Wastes placed in wooden storage boxes  $(1.2 \times 1.2 \times 2.4 \text{ m} [4 \times 4 \times 8 \text{ ft}])$  and  $0.6 \times 1.2 \times 2.4 \text{ m} [2 \times 4 \times 8 \text{ ft}])$ , or other suitable containers too large for the CWSU, will be stored in the CWSA near the CWSUs. Waste segregated as low-level radioactive will be stored in the CWSA in a radioactive materials area (RMA) near the CWSUs.

To meet the substantive requirements of 40 CFR 264, Subpart I, the RCRA applicable or relevant and appropriate requirements (ARARs), an inspection of the storage area (CWSA) will be conducted as part of the weekly waste container inspection. The purposes of the weekly container inspection are to look for containers that are leaking, that are deteriorating due to corrosion or other factors, to ensure that the containment system has not deteriorated due to corrosion, and to verify labels are in place and legible. Inspections of the containers and the CWSA are conducted to meet the guidance contained in MCP-443, "Temporary Accumulation Areas – Large Quantity Generators." The inspections will be documented on a weekly inspection form when completed. The checklists (MCP-3475, Temporary Storage of CERCLA Waste at INEEL") used to guide the inspection are maintained in the office at TAN with copies kept at the CWSUs.

When circumstances are such that it is advantageous to collect and temporarily store waste at the point of generation, a satellite accumulation area (SAA) may be established. SAAs shall be established and managed in accordance with MCP 442, "Satellite Accumulation Areas – Large Quantity Generators." The reference to MCP-442 and the associated requirements for establishing, inspecting, and managing an SAA are contained in MCP-3475, Temporary Storage of CERCLA Waste at INEEL."

Contaminated groundwater that is generated during well drilling, pumping tests, or groundwater monitoring (sampling) activities may be collected in tanks and temporarily stored near the point of generation. Requirements for secondary containment and daily inspection for such interim storage tanks are identified in section 2.5, Inspection Requirements, of the *Phase C Operations and Maintenance Plan*, Test Area North Final Groundwater Remediation, Operable Unit 1-07B (DOE-ID 2001b).

### 3.6 Waste Transportation and Disposition

At the conclusion of a remedial action, or when deemed necessary, industrial waste will be dispositioned to the INEEL landfill, following the protocols and completing the forms identified by the RRWAC. To achieve the waste management activity, industrial waste will be turned over to TAN operations personnel for management under existing facility waste streams and in accordance with standing facility procedures.

When sufficient quantities of waste has been accumulated to ship to one of the INEEL waste management areas or off the INEEL to a commercial waste management facility, a WGI will be contacted and a BBWI Form 435 completed and submitted for approval, if required. A Form 435 has been completed for the waste streams that have an IWTS profile number (see Table 2-1). As new waste streams are identified, a Form 435 will be completed and approved. Once the Form 435 is approved, the

WGI will provide assistance in packaging and transportation of the waste. It is important to note that all waste dispositioned to a permitted treatment, storage, and disposal facility (TSDF) should be labeled as CERCLA, to facilitate eventual management in accordance with the final remedy for the site. Should further characterization of the contaminated waste be necessary (e.g., toxicity characteristic determination), services will be requested from environmental monitoring and the SMO. Requesting these services requires completion of Form L0450-1, "Environmental Special Request Information Log," and Form 435.26, "Sample Management Office Services Request Form."

Management of contaminated wastes, generated at a subcontract laboratory during conductance of analytical testing, will be the responsibility of the subcontract laboratory. However, overall management of the samples must be in accordance with the requirements of MCP-2864, "Sample Management." Specifically, this MCP requires that the facility environmental safety and health manager provide written approval prior to return of any media, and that written documentation of sample disposition be developed and maintained. In addition, the requirements for identification, quantification, characterization, and approval by BBWI WGI and shipping personnel, prior to waste generation, applies to any waste generated during these operations. To initiate the return of these wastes to the INEEL, the subcontract laboratory will notify BBWI in the form of a written report identifying the known volume and characteristics of each waste type, including shipment and packaging details. The majority of the information required for this report will be provided by Form 435 completion. BBWI will assist the subcontractor laboratory in the preparation of these forms. Final authorization for the return of wastes will be provided in writing, from BBWI to the subcontract laboratory. Laboratory wastes will be sent to the Mixed Waste Storage Facility (MWSF) or to the RWMC Type-II Storage Modules, as applicable. It is important to note that all waste dispositioned to a permitted TSDF be labeled as CERCLA, to facilitate eventual management in accordance with the final remedy for the site. An unaltered sample could be immediately returned to its source. The returned material will be addressed with the source material at the site. All waste management activities undertaken by the subcontract laboratory must be in accordance with this plan, the contracted SOW, and the individual work plan.

Currently, all CERCLA remediation waste generated in the remediation efforts of OU 1-07B not processed through the NPTF are sent to an acceptable INEEL waste management area or an off-site facility in accordance with the off-site rule (40CFR 300.440).

### 3.7 Records Keeping and Reporting

The following records and reports related to this WMP are required to be maintained as indicated by MCP-443, "Temporary Accumulation Areas-Large Quantity Generator." Some of these may be completed by others, but must be available. These records and reports are to be maintained "at the facility" and include:

•	Hazardous waste determinations, characterization			
	information, and statements of process knowledge (by others)	3 years		

- CWSA facility inspection reports and log-in, log-out history 3 years
- Training records
   3 years
- Documentation with respect to all spills: Life of facility
  - Quantity released calculations

- Release report and follow-up notifications
- Spill specific hazardous waste determinations and characterizations.

Waste management information is also recorded and included in the following OU 1-07B project reports:

- Monthly waste management report
- Quarterly operations report.

### 4. REFERENCES

- DOE-ID, 1994, U.S. Department of Energy Idaho Operations Office Idaho National Engineering Laboratory Waste Minimization and Pollution Prevention Awareness Plan, U.S. Department of Energy Idaho Operations Office, DOE/ID-10333 (94) Revision 1, May.
- DOE-ID, 1996, Annual Site Treatment Plan Report, U. S. Department of Energy Idaho Operations Office, DOE/ID-10559, September.
- DOE-ID, 1998, Remedial Action Work Plan Test Area North Final Groundwater Remediation-Phase B, Operable Unit 1-07B, U. S. Department of Energy Idaho Operations Office, DOE/ID-10629, Revision 0, August.
- DOE-ID, 1999, INEEL Reusable Property, Recyclable Material, and Waste Acceptance Criteria, U. S. Department of Energy Idaho Operations Office, DOE/ID-10381, Revision 9, March.
- DOE-ID, 2001a, Phase C Remedial Action Work Plan for Test Area North Final Groundwater Remediation, Operable Unit 1-07B, U.S. Department of Energy Idaho Operations Office, DOE/ID-10679, Revision 1.
- DOE-ID, 2001b, Phase C Operations and Maintenance Plan for Test Area North Final Groundwater Remediation, Operable Unit 1-07B, U.S. Department of Energy Idaho Operations Office, DOE/ID-10684, Revision 2.
- INEEL, 1996, Waste Certification Plan for the Environmental Restoration Program, Idaho National Engineering and Environmental Laboratory, INEL-96/0043, April.
- INEEL, 1997, Explanation of Significant Differences from the Record of Decision for the Technical Support Facility Injection Well (TSF-05) and Surrounding Groundwater Contamination (TSF-23) and Miscellaneous No Action Sites, Final Remedial Action, Operable Unit 1-07B, Waste Area Group 1, Idaho National Engineering and Environmental Laboratory, Idaho National Engineering and Environmental Laboratory, INEEL/EXT-97-00931, November.

### Appendix A

### No-Longer Contained-In Determinations (NLCID)

- A-1. NLCID for Well Drilling Water from Wells TAN-47, 48, and 50 at 5 ppb—Approved
- A-2. NLCID for Well Drilling, Drill Cuttings, and Containment Pad Material—Approved
- A-3. NLCID for In Situ Bioremediation Air Stripper Discharge—Approved
- A-4. NLCID for Well Drilling and Development Water—Approved
- A-5. NLCID for NPTF Reinjected Groundwater—Approved

### A-1. NLCID for Well Drilling Water from Wells TAN-47, 48, and 50 at 5 ppb—Approved

Approval letter from R.W. Steger, DEQ, to K.E. Hain, DOE-ID, dated September 19, 1997.



DISTE: J. ROTHERMEL T. STOOPS G. MECHAM L. PETERSON R. Jones

1-110 North Hilton, Bolse, ID 20705-1255. (208) 334-0502

September 19, 1997

Kathleen E. Hain, Manager Environmental Restoration Program DOE - Idaho Operations Office 850 Energy Drive Idaho Falls, Idaho 83401-1563

Post-it® Fax Note 7671	Date #23/9 7 pages		
Mark Shaw	From Chriz Wernert		
Co_Cept.	Co.		
Phone #	Princ# 20e-37.3-0/83		
Fox: 208-526-2473	Fex #		

Dear Ms. Hain:

The Division of Environmental Quality, Air & Hazardous Waste, Hazardous Waste Permitting Bureau (HWPB) has reviewed your proposal for determining whether drilling water, leaking from two diverter seals during drilling operations at site OU 1-07B, contains a listed waste.

IDAHO DEQ

Based on the analytical data sheets provided with your submittal, the leaking water appears to contain the listed waste. Therefore, it is the position of the HWPB that the leaking water associated with drilling must be collected, sampled, and analyzed (in accordance with SW-846) to make a hazardous waste determination. If the concentration of TCE is 5 ppb or less, the water may be considered to no-longer-contain the listed waste. However, if the TCE is greater than 5 ppb, it must be managed as a bazardous waste.

If you have any questions regarding this letter, please contact Chris Wernert at (208) 373-0502.

Sincerely,

Randal W. Steger, Manager

Hazardous Waste Permitting Bureau

Air & Hazardous Waste

RWS/CMW/Ta ARARSTMOTCONTLIR

CC. Linda Meyer, EPA Region 10 Wayne Pierre, EPA Region 10 Dave Hovland, Remediation Bureau

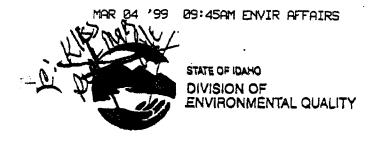
Margie English Remediation Bureau

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### A-2. NLCID for Well Drilling Water, Drill Cuttings, and Containment Pad Material—Approved

Approval letter from B.R. Monson, DEQ, to D.N. Rasch, DOE-ID, dated February 9, 1999.

Request letter from K. McNeel, LMITCO, to B.R. Monson, DEQ, dated January 21, 1999.



1410 North Hillon, Boise, ID 83706-1255, (208) 373-0502

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KOSHUTA

February 9, 1999

Donald N. Rasch
DOE - Idaho Operations Office
850 Energy Drive
Idaho Falls ID 83401-1563

Dear Mr. Rasch:

This letter is in response to a January 21, 1999, request for a "no-longer-contained-in" (NLCI) determination for well drilling water, drill cutting, and secondary containment pads for waste streams produced during drilling and development of monitoring wells in support of the OU1-07B remedial action at Test Area North (TAN) at the Idaho National Engineering and Environmental Laboratory (INEEL), EPA ID No. ID4890008952.

Based on a review/evaluation of this submittal by the DEQ, Air & Hazardous Waste Division, Hazardous Waste Permitting Bureau (HWPB), it appears the HWPB can approve this submittal with the following conditions:

- 1. This approval only includes the materials from those monitoring wells listed in Table I of the January 21, 1999, submittal. This includes water produced by the drilling operations having 30 parts per billion or less trichloroethylene (TCE) and drill cuttings, secondary containment pad soils, and gravels having 27 parts per million or less of TCE.
- 2. Treatment of drill water exceeding 30 ppb TCE shall only be performed in the "groundwater treatment facility" or the "in situ bioremediation air stripper," as described in Section 3.2 of the submittal. Similar or other CERCLA treatment technologies or processes shall not be implemented for any groundwater treated in accordance with this NLCI without prior DEQ approval.

If you have any questions regarding this matter, please contact Mark Jeffers at 208/373-0450.

Sincerely,

Brian R. Monson, Chief

Hazardous Waste Permitting Bureau

RID

Air & Hazardous Waste Division

BRM/MHJ/12 INBELSONICILLIR

cc: Roberta Hedeen, EPA Region 10

Cheryl Koshuta, LMITCO

Margie English, Remediation Bureau

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LOCKHEED MARTIN

Lockheed Martin Idaho Technologies Company P.O. Box 1625 Idaho Falls, ID 83415

January 21, 1999

Mr. Brian R. Monson, Chief Hazardous Waste Permitting Bureau Idaho Division of Environmental Quality 1410 North Hilton Road, 3<sup>rd</sup> Floor Boise, ID 83706-1255

REQUEST FOR A "NO-LONGER-CONTAINED-IN" DETERMINATION FOR WELL DRILLING WATER, DRILL CUTTINGS, AND SECONDARY CONTAINMENT PADS – KM-11-99

References:

- (a) C. R. Koshuta letter to B. R. Monson, June 26, 1998, Request for a No Longer Contained In" Determination, CRK-68-98
- (b) K. McNeel letter to B. R. Monson, October 6, 1998,
  Supplementary Information to Support A Request For A No
  Longer Contained In Determination For Well Drilling Water, Drill
  Cuttings, and Secondary Containment Pads, KM-49-98
- (c) K. McNeel letter to B. R. Monson, November 12, 1998, Revised Notification of Change in Analytical Method Supporting No Longer Contained In Determination for Treated Water and Well Drilling Water, KM-61-98
- (d) K. McNeel letter to B. R. Monson, November 30, 1998, Modification To The Request For A No Longer Contained In Determination On Drill Cuttings And Soil, KM-66-98

### Dear Mr. Monson:

This letter provides a summary of the requests and commitments made in references (a) through (d) as well as in several telephone conversations with DEQ staff. The information contained in this letter represents a compilation of the information in the noted references. The only new information contained herein is the inclusion of one additional well, TAN-33. This well was previously cored into the saturated zone and is included in this request to cover future additional work to ream the cored borehole to a larger diameter so the well can be used as a remediation well.

The INEEL is requesting a no longer contained in determination (NLCID) on three separate material types or waste streams associated with drilling monitoring and remediation wells at TAN in support of the OU 1-07B remedial action. These materials

Mr. Brian R. Monson January 21, 1999 KM-11-99 Page 2

include water produced by the drilling operations which has less than or equal to 30 parts per billion (ppb) of tricholorethylene (TCE), and drill cuttings and secondary containment pad soil and gravel which have less than or equal to 27 parts per million (ppm) of TCE.

### The three material types are:

- Drilling Water (water produced during well drilling)
- Drill Cuttings (sediments and basalt cuttings from the saturated zone produced during well drilling)
- Drilling Containment Pad Materials (sand and gravel used for containment pad construction)

Information supporting this request is provided below under the following subject headings:

- 1. NLCID Concentration Level Basis For Water
- 2. NLCID Concentration Level Basis For Drill Cuttings and Containment Pad Soil and Gravel
- 3. NLCID Application For Drilling Water
- 4. NLCID Application For Drill Cuttings and Containment Pad Soil and Gravel
- 5. NLCID Application General
- 6. Well Locations
- 7. Sampling Frequency and Location
- 8. Sampling and Analysis Methods and QA/QC
- 9. Erosion Control

### 1. NLCID CONCENTRATION LEVEL BASIS FOR WATER

In your letter to LMITCO (Cheryl Koshuta) dated March 6, 1998, the Idaho Division of Environmental Quality (DEQ) determined that groundwater pumped from Test Area North (TAN) Technical Support Facility production wells 01 and 02 "no longer contained" a listed hazardous waste as long as TCE concentrations were at or below 30 parts per billion (ppb). The basis for choosing 30 ppb TCE is discussed in that letter.

Mr. Brian R. Monson January 21, 1999 KM-11-99 Page 3

### 2. NLCID CONCENTRATION LEVEL BASIS FOR DRILL CUTTINGS AND CONTAINMENT PAD SOIL AND GRAVEL

The concentration of 27 ppm total TCE is derived from the Region 9 Preliminary Remediation Goals (PRGs) 1998. The table in this Region IX document states that a concentration of 2.7 ppm TCE in soil results in a 1E-06 risk using a residential exposure scenario. Extrapolation to a risk level of 1E-5, used in previous requests for a no longer contained in determination, results in an allowable TCE concentration of 27 ppm. In addition, INEEL agrees that future requests for no longer contained in determinations at the INEEL will be based on criteria in the Region IX document unless it can be demonstrated that the waste will be managed such that dermal exposure is not a credible exposure route. In such case INEEL may propose use of alternate, more appropriate, risk-based concentrations for listed waste constituents.

### NLCID APPLICATION FOR DRILLING WATER

- 3.1 Any well drilled in an area in which the TCE concentration of the groundwater is known to be, or highly suspected of being, 30 ppb or more, will have an initial barrier set up around the well head to contain the drill water until it can be sampled and analyzed. If the drilling water is found to be 30 ppb or less, the barrier will be removed and the drill water will be discharged to the soil surface. If the water is found to be greater than 30 ppb, drilling will be stopped, secondary containment will be installed, and then the drilling will be continued.
- 3.2 Any drill water that exceeds 30 ppb will be considered contaminated with listed waste and would be collected and transferred to the groundwater treatment facility (GWTF) or in situ bioremediation (ISB) air stripper, or similar CERCLA treatment technology, for processing. Any PPE or other secondary wastes that contacted drill water above 30 ppb will be managed as hazardous waste.
- 3.3 Any PPE or other secondary wastes that contacts drill water less than or equal to 30 ppb will be disposed as nonhazardous waste in accordance with the INEEL Reusable Property, Recyclable Material, and Waste Acceptance Criteria.
- 4. NLCID APPLICATION FOR DRILL CUTTINGS AND DRILLING CONTAINMENT PAD SOIL AND GRAVEL
- 4.1 Drill cuttings from above the saturated zone are not considered to contain RCRA-listed waste and will be discharged to the ground surface.

- 4.2 Drill cuttings from the saturated zone and soil/gravel from the drilling containment pad will be sampled and analyzed as described in the Field Sampling Plan (FSP) for Drill Cuttings and Secondary Containment Pads for TAN Wells for OU 1-07B (INEEL/EXT-98-00569). EPA SW 846 Method 8260A will be used to analyze these materials for total VOCs, including trichloroethylene (TCE). The drill cuttings and soil/gravel will be sampled and analyzed separately. It is conceivable that one of the media may pass the test and one may fail. Subsequent management will be dependent on the test results for each media. The FSP for Drill Cuttings and Secondary Containment Pads for TAN Wells has been reviewed and approved by DEQ.
- 4.3 If the concentration of TCE in the solid material (drill cuttings from the saturated zone or soil/gravel from the containment pad) is less than or equal to 27 ppm, then the solid material shall be deemed to "no longer contain" TCE as a RCRA listed waste. After a complete hazardous waste determination demonstrates the solid material does not exhibit a characteristic of a hazardous waste, it will be disposed of on the ground near the well.
- 4.4 If the concentration of TCE in the solid material (drill cuttings from the saturated zone or soil/gravel from the containment pad) is greater than 27 ppm, then the solid material will be managed as an F001 listed waste. The drill cuttings will be collected from the frac tank and placed into containers for storage pending disposition as an F001 hazardous waste. The soil/gravel from the containment pad will be excavated, placed into containers, and managed as an F001 listed waste.

## 5. NLCID APPLICATION GENERAL

- 5.1 Each secondary waste stream which comes into direct contact with drill water, drill cuttings, or soil/gravel will be managed as RCRA listed waste until the water or solid material is determined to no longer contain a RCRA listed waste. At that point those secondary waste streams will no longer be considered as a RCRA listed waste, but will still be subject to a hazardous waste determination in accordance with IDAPA 16.01.05.006 which references 40 CFR 262.11.
- 5.2 Well drilling activities at locations known to be outside the TCE plume, based on current groundwater monitoring information, would not result in drill water, drill cuttings, PPE, and other secondary wastes contaminated with RCRA-listed hazardous waste for TCE. These waste streams would therefore be managed as non-listed. Solid waste would remain subject to a hazardous waste determination in accordance with IDAPA 16.01.05.002 which references 40 CFR 262.11. The determination will focus on whether the solid waste exhibits a characteristic of a hazardous waste.

## 6. WELL LOCATIONS

6.1 Well locations covered in this request include wells TAN-47 and 50 (partially completed in the unsaturated zone), well TAN-33 (previously cored into the saturated zone) and future wells PNA-4, 2, and 1. Three existing wells, TAN-37, 48, and 49 are also included in this request to cover drill cuttings and drilling containment pad materials. To simplify the NLCI request it will be beneficial to separate discussion regarding existing wells and future wells.

## 6.2 NLCI Determination For Existing Wells

Drilling containment pads were constructed for each of three wells (TAN-37, 48, and 49) to provide secondary containment of diverter seal leakage during drilling operations. Disposition of the containment pads is pending approval of this no-longer contained-in request and sampling per the FSP.

## 6.3 NLCI Determination For Future Well Drilling

Future well drilling activities include completion of two partially complete wells (TAN-47 and 50), reaming of well TAN-33, and drilling of three new wells (PNA-4, 2, and 1). Wells TAN-47 and 50 were drilled to within approximately 10 feet of the water table and were placed on hold pending consideration of this NLCI request. These wells are located in the distal zone of the plume where anticipated TCE concentrations will be on the order of several hundred ppb. Well TAN-33, located in the medial zone of the plume, was previously cored into the saturated zone and will be reamed to a larger well diameter. The TCE concentrations at this well are also anticipated to be on the order of several hundred ppb. Wells PNA-4, 2, and 1 will be located downgradient of TAN-47 and 50 where TCE concentrations are expected to be approximately 100, 50 and less than 5 ppb respectively.

6.4 Table 1 [Attachment 1] is enclosed to provide the projected waste quantities. Also enclosed are a plume map [Attachment 2] showing the locations of all of the wells addressed in this request and a diagram of the drilling operation equipment layout (drill rig, containment pad, and frac tank locations) [Attachment 3].

## 7. SAMPLING FREQUENCY AND LOCATION

7.1 The number of samples to be taken for drill cuttings and for each secondary containment pad is described in the FSP. The following sections provide a general description of sample frequency and location. Note that sampling of water produced during drilling is not covered in the FSP so the sampling frequency and location requirements are addressed separately below.

## 7.2 Existing Wells (TAN-37, 48, and 49)

<u>Drill Cuttings and Containment Pad Materials:</u> Drill cuttings and drilling containment pad soil and gravel will be sampled in accordance with the FSP. The FSP identifies that 5 samples will be collected from the estimated 500 ft<sup>3</sup> of drill cuttings generated for each well. For drilling containment pad sampling, the FSP identifies a typical sample grid and sampling approach (total of 14 samples) based on observation of where drilling water leaks or flows onto the pad occurred during the drilling operation.

7.3 Future Well Drilling (TAN-47, TAN-50, TAN-33, PNA-1, PNA-2, and PNA-4) Drilling Water: A frac tank with a secondary containment liner will be installed to collect water produced during drilling. A temporary barrier will be installed around well head to contain drilling water leaking from the diverter seals until it can be sampled and analyzed. For the diverter seals leakage, two samples will be collected at the lower diverter seal discharge. The water samples collected at the lower diverter seal discharge will be analyzed for TCE as described under item number 8 below. If both samples of the diverted seal leakage are found to be 30 ppb or less, the temporary barrier around the well head will be removed and drilling water leaking from the diverter seals will be allowed to discharge to the soil surface. Drill cuttings and the majority of the drilling water will be collected in a frac tank. Upon completion of drilling activity the water from the frac tank will be discharged to soil surface (with appropriate precaution for erosion control) and the drill cuttings will be handled as noted below.

If the drilling water from the lower diverter seal is found to be greater than 30 ppb, drilling will be stopped and a secondary containment pad will be installed. The secondary containment pad and the frac tank with secondary containment liner will contain the drilling water and drill cuttings. For drilling water collected in the frac tank, 2 grab samples will be taken prior to removal of the water from the frac tank. If both grab samples have a TCE concentration of 30 ppb or less, it will be discharged to the soil surface. If either sample of the drilling water is greater than 30 ppb, it will be transferred to the GWTF or the ISB Air Stripper for processing.

<u>Drill Cuttings</u>: Drill cuttings will be sampled in accordance with the FSP. The FSP identifies that 5 samples will be collected from the estimated 500 ft<sup>3</sup> of drill cuttings generated for each well.

<u>Drilling Containment Pad Materials:</u> If drilling water from the lower diverter seal is found to contain greater than 30 ppb TCE a drilling containment pad will be installed. Should a containment pad be necessary the containment pad soil and gravel will be sampled on completion of the drilling activity in accordance with the FSP. Sampling locations and frequencies are identified in the FSP. For drilling containment pad sampling, the FSP identifies a typical sample grid and sampling approach (total of 14 samples) based on observation of where drilling water leaks or flows onto the pad during the drilling operation.

## SAMPLING AND ANALYSIS METHODS AND QA/QC

## 8.1 Water Analysis

Water samples will be analyzed at the INEEL Analytical Laboratory Department (ALD) laboratory at INTEC according to the EPA's SW-846 Method 8260. The INTEC laboratory has been approved by the LMITCO Sample Management Office (SMO). The OU 1-07B project will provide the normal suite of QA/QC samples (field and trip blanks, matrix spike and matrix spike duplicates) to the ALD INTEC laboratory. The ALD INTEC laboratory also undergoes a program of LMITCO SMO-administered monthly performance evaluation (PE) samples in support of the OU 1-07B project. Under this PE program two water PE samples (single blind spiked samples) per month are provided to the ALD INTEC lab for analysis. Results from the analysis in the lab are compared against certified values for the samples provided. This program is currently described in the Final Sampling and Analysis Test Plan for TAN Phase 0 Activities for OU 1-07A and the draft Remedial Action Work Plan Phase B for OU 1-07B.

## 8.2 Drill Cuttings and Containment Pad Material Analysis:

Drill cuttings and secondary containment pad sand and gravel will be sampled in accordance with the FSP. The FSP identifies data needs, data quality objectives, data validation requirements, sample locations and quantities, sampling methods, and analytical methods. Samples will be sent to a LMITCO Sample Management Office approved off site lab for analysis.

## EROSION CONTROL

Discharge of water from the "Frac" tanks will be managed to control erosion. Requirements to "minimize the area of disturbance" and "implement appropriate erosion and flood control measures for non-storm water discharges" are covered in the Storm Water Pollution and Prevention Plan for TAN Monitoring and Extraction Well Drilling for OU 1-07B dated 4-27-98.

Should you have any questions on this issue, please feel free to contact me at 6-7925.

Sincerely,

K. McNeel, Manager

RCRA/TSCA Policy and Permitting

RAM:kd

## Attachments

cc: w/Attachments

M. English, DEQ

K. E. Hain, DOE-ID, MS 1117

D. N. Rasch, DOE-ID, MS 1146

R. Mark Shaw, DOE-ID, MS 1117

## w/o Attachments

K. M. Davis, LMITCO, MS 3921

K. L. Falconer, LMITCO, MS 3921

A. E. Jantz, LMITCO, MS 3953

C. R. Koshuta, LMITCO, MS 3428

D. J. Kuhns, LMITCO MS 3920

G. D. Mecham, Parsons, MS 3954

R. A. Montgomery, LMITCO, MS 3427

L. N. Peterson, LMITCO, MS 3953

J. S. Rothermel, Parsons, MS 3954

K. McNeel Letter File

# Attachment 1

Table 1 Projected Waste Quantities

A-2-12

Table 1. Projected waste quantities

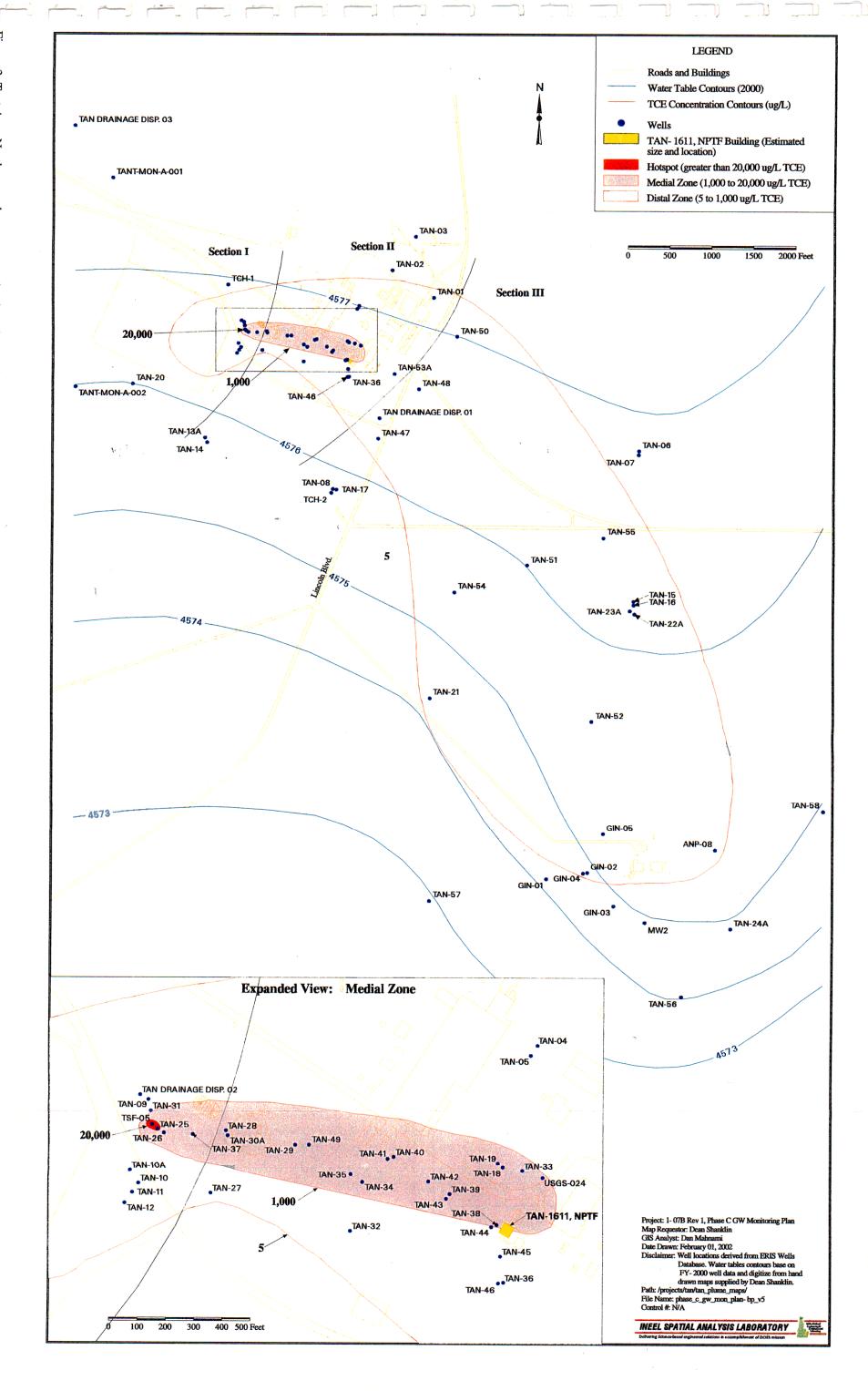
Planned Well Designation	Drill Water Generated (gallons)	Drill Water to Containment <sup>1</sup> (gallons)	Drill Cuttings (ft <sup>3</sup> )	Secondary Containment Materials (ft <sup>3</sup> )
TAN-37 <sup>2</sup>	NA <sup>3</sup>	NA <sup>3</sup>	500	3000
TAN-48	NA <sup>4</sup>	NA <sup>4</sup>	500	3000
TAN-49 <sup>2</sup>	NA <sup>3</sup>	NA <sup>3</sup>	500	3000
TAN-47	15,000	300	500	3000
TAN-50	15,000	300	500	3000
PNA-I	15,000	300	500	3000
PNA-2	15,000	300	500	3000
PNA-4	15,000	300	500	3000
TAN-33 <sup>5</sup>	7,500	150	250	3000
Total	82,500	1,650	4,250	27,000

- 1. This column represents the amount of water that actually enters the containment pad via leakage from the drill diverter seal during drilling operations. The majority of this water is collected in the pad sump and is pumped to the frac tank.
- TAN-49 and TAN-37 are up-plume wells. TCE concentrations in the plume here may, based on sampling, result in the no-longer contained-in limits for drilling water, drill cuttings, and drilling containment pads being exceeded. In this case produced water, drill cuttings, and drilling containment pad materials would be managed as hazardous waste.
- 3. Drilling water stored in the frac tank or captured in the drilling containment pad was transferred to the GWTF and processed prior to this NLCI request being submitted and approved.
- 4. Drilling water stored in the frac tank or captured in the drilling containment pad was sampled, analyzed, and found to be below 5 ppb for TCE. Based on the earlier DEQ no longer contained determination of September 19, 1997, the water was discharged to the soil surface.
- 5. TAN-33 was previously cored into the saturated zone. Additional work is required to ream the cored hole to a completed well diameter so the well can be used as a remediation well.

# Attachment 2

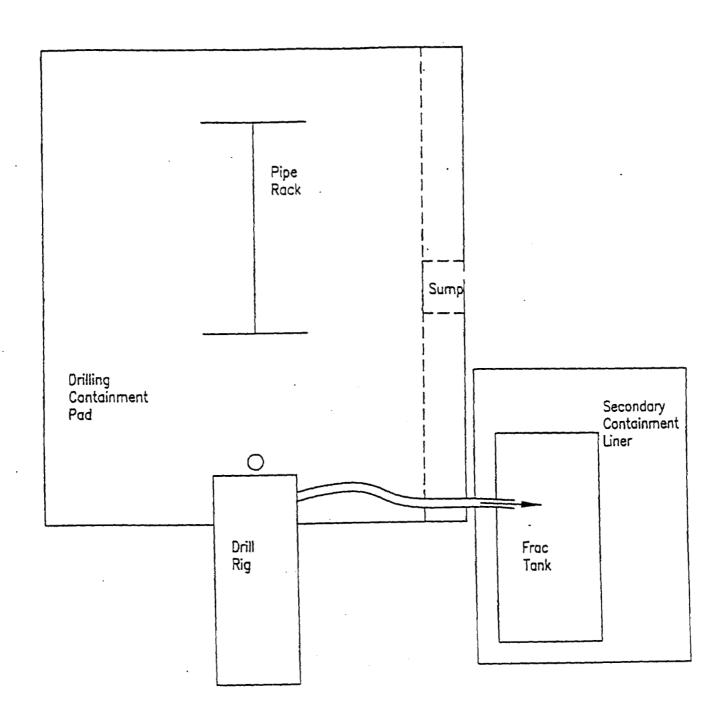
Plume Map with Well Locations

A-2-16

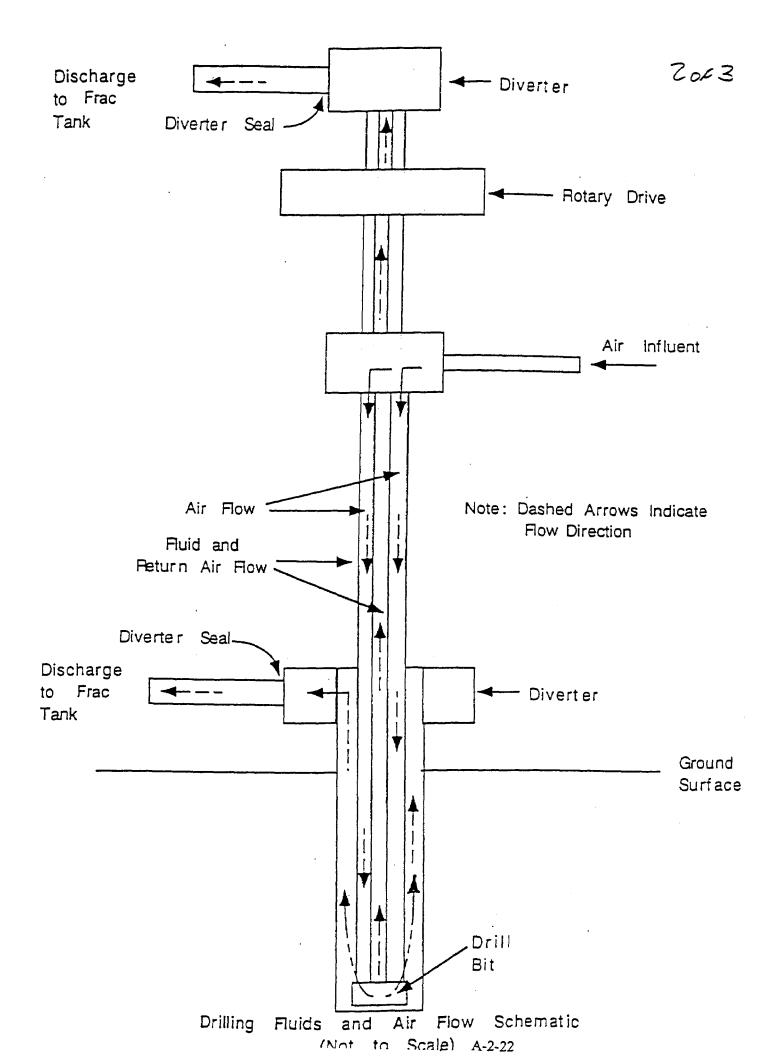


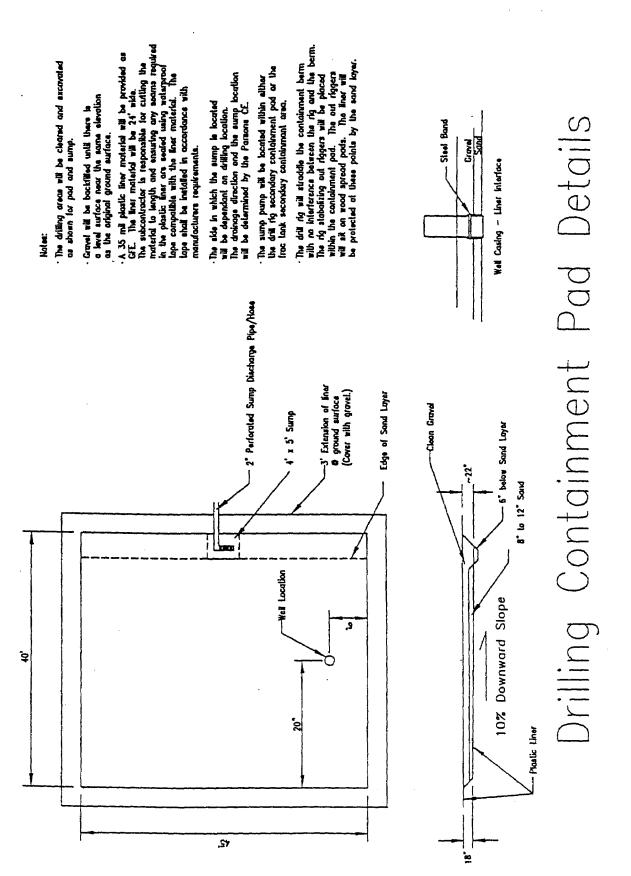
# Attachment 3

Drilling Operation Equipment Layout



Drill Site Setup





# A-3. NLCID for In Situ Bioremediation Air Stripper Discharge—Approved

Revised notification of change letter from K. McNeel, LMITCO, to B.R. Monson, DEQ, dated November 12, 1999.

Notification of change letter from K. McNeel, LMITCO, to B.R. Monson, DEQ, dated October 20, 1998.

Memo from A.E. Jantz, LMITCO, to Distribution, dated September 25, 1998.

Approval letter from B.R. Monson, DEQ, to C. Koshuta, LMITCO, dated September 17, 1998.

Supplement to request letter from K. McNeel, LMITCO, to B.R. Monson, DEQ, dated August 25, 1998.

Request letter from C.R. Koshuta, LMITCO, to B.R. Monson, DEQ, dated August 7, 1998.



LOCKHEED MARTIN

Lockheed Martin Idaho Technologies Company P.O. Box 1625 Idaho Falls, ID 83415

November 12, 1998

Mr. Brian Monson Hazardous Waste Permitting Bureau Division of Environmental Quality 1410 N. Hilton Boise, Idaho 83706

REVISED NOTIFICATION OF CHANGE IN ANALYTICAL METHOD SUPPORTING NO LONGER CONTAINED IN DETERMINATION FOR TREATED GROUNDWATER AND WELL DRILLING WATER FOR OU 1-07B - KM-61-98

## References:

- (a) K. McNeel letter to B. R. Monson, KM-54-98, Notification Of Change In Analytical Method Supporting No Longer Contained in Determinations for Treated Groundwater and Well Drilling Water for OU 1-07b, October 20, 1998
- (b) K. McNeel letter to B. R. Monson, KM-41-98 Supplement to a Request for a No-longer Contained-in Determination for Treated Groundwater for OU 1-07B, August 25, 1998
- (c) B. R. Monson letter to C. R. Koshuta, (DEQ, HWPB Approval Letter for a No-longer Contained-in Determination for Treated Groundwater for OU 1-07B), September 17, 1998
- (d) K. McNeel letter to B. R. Monson, KM-49-98, Supplementary Information to Support a Request for a No-longer Contained-in Determination for Well Drilling Water, Drill Cuttings, and Secondary Containment Pads, October 6, 1998

### Dear Mr. Monson:

In my October 20, 1998 notification letter, (Reference a) I outlined the rationale for a change in analytical method for the CERCLA Operable Unit (OU) 1-07B air stripper discharge and well drilling water compliance samples due to failure of GC/MS system at the Ground Water Treatment Facility. The replacement analytical method was to take advantage of the analytical capability set up to support the In Situ Bioremediation (ISB) Field Evaluation. The proposed Solid Phase Micro extraction technique is not an approved EPA method and, upon further consideration and discussions with the CERCLA Remedial Project Managers, it was decided to find a laboratory that could provide rapid turn-around using an approved EPA method.

B. R. Monson November 12, 1998 KM-61-98 Page 2

Consequently, the project has engaged the services of the INEEL Analytical Laboratory Department (ALD) located at INTEC to analyze all OU1-07 air stripper effluent and well drilling groundwater samples. The laboratory has been approved by the LMITCO Sample Management Office to conduct volatile organic analyses according to the EPA's SW-846 Method 8260. The project will provide the normal suite of QA/QC samples (field and trip blanks, matrix spike and matrix spike duplicates) to the ALD and will begin a program of monthly performance evaluation samples. These steps have been taken to insure the compliance monitoring samples for the ISB air stripper discharge into well TAN-49 and well drilling water are of the highest quality and to support the respective no-longer-contained-in (NLCI) criteria.

Please note that this letter submits a revision to the analytical method outlined in Reference (a) and thereby returns the analytical methods for water analysis identified in References (b) and (d) to the original Method 8260. Initiation of the ISB field evaluation has been delayed several weeks and is now planned to start on or about November 16, 1998. The approved EPA SW-846 Method 8260 will be used for all of our compliance monitoring in support of ISB air stripper discharge and well drilling water NLCI criteria.

Should you have any questions or concerns regarding this notification, please contact me at (208) 526-7925 or Mr. Lance Peterson at (208) 526-9738.

Sincerely,

K. McNeel, Manager

RCRA/TCSA Policy and Permitting

RAM:kd

cc: K. M. Davis, LMITCO, MS 3921

M. English, DEQ

K. L. Falconer, LMITCO, MS 3921

K. E. Hain, DOE-ID, MS 1117

A. E. Jantz, LMITCO, MS 3953

D. J. Kuhns, LMITCO, MS 3920

R. A. Montgomery, LMITCO, MS 3427

L. N. Peterson, LMITCO, MS 3953

D. N. Rasch, DOE-ID, MS 1146

R. M. Shaw, DOE-ID, MS 1117

Gordon Webb, LMITCO, MS 5206

K. McNeel Letter File



LOCKHEED MARTIN

Lockheed Martin Idaho Technologies Company P.O. Box 1625 Idaho Falls, ID 83415

October 20, 1998

Mr. Brian R. Monson Division of Environmental Quality Hazardous Waste Permitting Bureau 1410 North Hilton Road Boise, ID 83706-1255

NOTIFICATION OF CHANGE IN ANALYTICAL METHOD SUPPORTING NO LONGER CONTAINED IN DETERMINATIONS FOR TREATED GROUNDWATER AND WELL DRILLING WATER FOR OU 1-07B – KM-54-98

## References

- (a) K.McNeel letter to B. R. Monson, KM-41-98 Supplement to a Request for a No-longer Contained-in Determination for Treated Groundwater for OU 1-07B, August 25, 1998
- (b) B. R. Monson letter to C. R. Koshuta, (DEQ, HWPB Approval Letter for a No-longer Contained-in Determination for Treated Groundwater for OU 1-07B), September 17, 1998
- (c) K. McNeel letter to B. R. Monson, KM-49-98, Supplementary Information to Support a Request for a No-longer Contained-in Determination for Well Drilling Water, Drill Cuttings, and Secondary Containment Pads, October 6, 1998

### Dear Mr. Monson:

In our August 25, 1998, Reference (a), and October 6, 1998, Reference (c), letters requesting a No-longer Contained-in Determinations (NLCID), we identified a sample analysis strategy for water that used the OU 1-07B Groundwater Treatment Facility (GWTF) laboratory GC/MS following EPA SW-846 Method 8260A for Volatile Organic Compound (VOC) analysis. During the month of September and early October the GWTF GC/MS system continually failed the initial calibration step during setup for routine performance monitoring. All attempts by the Idaho National Engineering and Environmental Laboratory (INEEL) staff and instrument vendor technical support personnel have failed to resolve the problem. As a result, a decision was made last week to utilize a laboratory at the INEEL Research Center to cover our water analysis needs for both air stripper discharge compliance monitoring and well drilling water analysis.

Mr. Brian R. Monson October 20, 1998 KM-54-98 Page 2

The new laboratory that will be performing VOC analysis for this water is the same laboratory that we are using to support the OU 1-07B In Situ Bioremediation Field Evaluation. The analytical method that will be used is solid phase microextraction (SPME) with gas chromatograph (GC) analysis. Using an Electron Capture Detector, a detection limit of 1 ug/L can be achieved using this method.

The SPME technique is not an approved EPA method, so two separate approaches to QA/QC will be used. The first method will implement the same QA/QC that was used for performance monitoring of the GWTF laboratory. This includes a "performance evaluation" (PE) program administered through the LMITCO Sample Management Office. Under this program two water PE samples (single blind spiked samples) per month will be provided to the laboratory for analysis. Results from the SPME technique will be compared against certified values for the PE sample submitted for analysis. Performance evaluation samples are currently being analyzed at the new laboratory by the SPME technique and results can be available for Agency review if desired.

Additional QA/QC of the SPME technique will be provided by sending approximately 10% duplicate ISB Field Evaluation samples to an off site laboratory for confirmation analysis. If, after a test period of one year, a comparison of results between SPME and off-site duplicates reveals no significant differences, the off-site duplicate samples will be discontinued. The PE program will continue.

Please note that this letter is intended to provide notification of the change in the analytical approach with respect to the previously approved NLCID for the air stripper discharge, Reference (b), and the pending NLCID for well drilling water, Reference (c). Operation of the in-situ bioremediation project is planned to begin on or about October 26, 1998. Barring objections from your office, the SPME technique will be used at that time.

Should you have any additional questions or concerns regarding this notification, please contact me at (208) 526-7925.

Sincerely,

K. McNeel, Manager

W.J. Becker for

RCRA/TSCA Policy and Permitting

AEJ:cl

Mr. Brian R. Monson October 20, 1998 KM-54-98 Page 3

cc: K. M. Davis, LMITCO, MS 3921

M. English, DEQ

K. L. Falconer, LMITCO, MS 3921

K. E. Hain, DOE-ID, MS 1117

A. E. Jantz, LMITCO, MS 3953

D. J. Kuhns, LMITCO, MS 3920

R. A. Montgomery, LMITCO, MS 3427 pm

L. N. Peterson, LMITCO, MS 3953

D. N. Rasch, DOE-ID, MS 1146

R. M. Shaw, DOE-ID, MS 1117

K. McNeel File

## Lockheed Martin Idaho Technologies Company

## INTERDEPARTMENTAL COMMUNICATION

Date:

September 25, 1998

To:

Distribution

From:

A. E. Jantz

MS 3953

6-8517

Subject:

NO LONGER CONTAINED IN DETERMINATION FOR TREATED

GROUNDWATER FROM THE ISB AIR STRIPPER FOR OU 1-07B

AEJ-02-98

Attached is the DEQ HWPB approval (Letter from B. R. Monson, DEQ, to C. K. Koshuta, LMITCO EA, dated September 17, 1998) for the no longer contained in request for treated groundwater processed through the In Situ Bioremediation (ISB) Air Stripper System. Please note that the "well purge water" referenced in DEQ's approval letter only applies to purge water after it is processed through the air stripper.

Also attached are the original LMITCO request letter dated August 7, 1998, and the LMITCO supplemental information letter dated August 25, 1998.

Applicable requirements for verification sampling during system checkout and startup, routine verification sampling, and notification to DEQ if verification sampling results exceed 5 ppb for TCE, are being incorporated into the final ISB Field Evaluation Work Plan.

AEJ:dis

#### Attachments

## Distribution:

D. J. Kuhns, MS 3920

L. N. Peterson, MS 3953

J. S. Rothermel, MS 3954

G. D. Mecham, MS 3954

R. A. Montgomery, MS 3427

K. M. Davis, MS 3921

R. M. Shaw, DOE, MS 1117

**ARDC MS 3922** 



1410 North Hilton, Boise, ID 83706-1255, (208) 373-0502

September 17, 1998

Cheryl Koshuta, Manager LMITCO P.O. Box 1625 Idaho Falls, ID 83415

Dear Ms. Koshuta:

This letter is in response to your August 7, 1998, letter and the supplemental letter dated August 25, 1998, requesting a "no longer contained in" determination for the effluent water stream produced from air stripper treatment unit operations, which will be treated to 5 ppb and reinjected, for Operable Unit (OU) 1-07B at Test Area North (TAN) on the Idaho National Engineering and Environmental Laboratory (INEEL), EPA ID No. ID4890008952.

Upon review of the August 25 letter submitted as a result of the August 14, 1998, conference call, the DEQ, Air & Hazardous Waste Division, Hazardous Waste Permitting Bureau (HWPB) will approve a "no longer contained in" determination only for F001-contaminated groundwater produced from the hydraulic containment/recirculation system operated in support of the in-situ bioremediation (ISB) treatability study for OU 1-07B, and well purge water generated during sampling in support of the ISB field evaluation and OU 1-07B groundwater monitoring activities. Associated with this approval, DOE/LMITCO shall report any occurrence of the air stripper discharge exceeding 5 ppb to the DEQ HWPB and Remediation Bureau within 45 days of the receipt of any/all analytical data with respect to the exceedence(s).

This "no longer contained in" determination does not relieve DOE/LMITCO from compliance with HWMA/RCRA Land Disposal Requirements, if applicable.

If you have any questions or comments concerning this project, please contact Mark Jeffers at (208) 373-0450.

Sincerely,

Brian R. Monson, Chief

Hazardous Waste Permitting Bureau

BRM/MHJ/ra INEEL98/TANCNT2LTR

cc: Linda Meyer, EPA Region 10

Don Rasch, DOE-ID

Margie English, Remediation Bureau

A-3-9

Mark Jeffers, HWPB

INpgc COF



LOCKHEED MARTIN

Lockheed Martin Idaho Technologies Company P.O. Box 1625 Idaho Falls, ID 83415

August 25, 1998

Mr. Brian R. Monson, Chief Hazardous Waste Permitting Bureau Idaho Division of Environmental Quality 1410 North Hilton Road, 3<sup>rd</sup> Floor Boise, ID 83706-1255 bcc: K. M. Davis, MS 3921

K. L. Falconer, MS 3921A. E. Jantz, MS 3953C. R. Koshuta, MS 3428D. J. Kuhns, MS 3920

R. A. Montgomery, MS 3427

K. McNeel File

SUPPLEMENT TO A REQUEST FOR A NO-LONGER CONTAINED- IN DETERMINATION FOR TREATED GROUNDWATER FOR OU 1-07B - KM-41-98

Reference: C. R. Koshuta letter to B. R. Monson, August 7, 1998, Request For A

No-Longer Contained- In Determination For Treated Groundwater For

OU 1-07B - CRK-78-98

Dear Mr. Monson:

This letter responds to Mr. Randy Steger's request for additional information during a telephone call on August 18, 1998. Specifically, he requested the following:

### AIR STRIPPER PROCESS CONTROLS

Air stripping is a mature and reliable treatment technology. Design of this air stripper system is based on expected influent concentrations which range up to 1,600 parts per billion (ppb) tricloroethylene (TCE) for the water extracted from well TAN-29. Based on design calculations at these influent concentrations, a TCE removal efficiency of 99.69% is needed for the air stripper to meet 5 ppb TCE. Vendor data for the specified air stripper indicates that the air stripper has a removal efficiency of 99.98%, therefore the specified air stripper will treat the influent to less than 5 ppb TCE.

The air stripper system is described in the draft Enhanced Bioremediation Field Evaluation Work Plan for OU 1-07B which was previously submitted to DEQ (CERCLA – FFA/CO) for review.

The air stripper system design incorporates process controls that will automatically shut down all process equipment in the system when certain conditions develop. The process controls designed for the air stripper system will continuously monitor for abnormal conditions that would cause the efficiency of the stripping operation to decrease. The

Mr. Brian R. Monson August 25, 1998 KM-41-98 Page 2

condition and corresponding control action, as described in the work plan, are listed below:

Condition Clogged Air Stripper	Symptom High Air Discharge Pressure	Action System Shut Down	
Blower Malfunction	Low Air Discharge Pressure	System Shut Down	
Increase in Influent Flow Rate	Sump High Water Level	System Shut Down	

During initial system checkout and start-up, monitoring of process effluent will be performed by taking effluent samples daily for the first four days of operations. These samples will be analyzed at the GWTF lab to verify that the air stripper is treating the influent water to below MCLs. Verification sampling after initial start-up will be performed on a monthly basis. These requirements will be included in the final Enhanced Bioremediation Field Evaluation Work Plan.

## VERIFICATION SAMPLING

As indicated in the request letter, routine verification sampling will be performed on a monthly basis.

Should results from a verification sample indicate that TCE concentrations exceed 5 ppb at the discharge of the air stripper, a second verification sample will be taken, within 24 hours of receiving the initial results, and analyzed. If results from the second sample confirm that TCE concentrations exceed 5 ppb, operation the treatment system will be interrupted, cause of the excursion will be determined and corrective measures implemented. Because of the very mature and reliable nature of the air stripping treatment technology, the probability of upset conditions occurring is expected to be low. Finally, any occurrence of the air stripper discharge exceeding 5 ppb will be promptly reported to DEQ. In addition any other release to the environment, of groundwater above 5 ppb TCE, from this project will be reported to DEQ as a release of hazardous waste.

These requirements will be included in the final Enhanced Bioremediation Field Evaluation Work Plan.

## 3. SAMPLE ANALYSIS

As noted in the request letter, sample analysis will be performed in the GWTF lab using SW-846 Method 8260A. GWTF laboratory performance is monitored through a "performance evaluation" (PE) program that is administered through the LMITCO

Mr. Brian R. Monson August 25, 1998 KM-41-98 Page 3

Sample Management Office. Under this program two water PE samples (single blind spiked samples) per month are provided to the GWTF lab for analysis. Results from the analysis in the GWTF lab are compared against certified values for the samples provided. This program is currently described in the Final Sampling and Analysis Test Plan for TAN Phase 0 Activities for OU 1-07A and the draft Remedial Action Work Plan – Phase B for OU 1-07B.

Should you have any additional questions or concerns about this request, please contact me at (208) 526-7925.

Sincerely, W.J. Becker for

Kliss McNeel, Manager

Policy and Permitting Department

RAM:lnb

cc: M. English, DEQ

K. E. Hain, DOE-ID, MS 1117

D. N. Rasch, DOE-ID, MS 1146

R. M. Shaw, DOE-ID, MS 1117



LOCKHEED MARTIN

Lockheed Martin Idaho Technologies Company P.O. Box 1625 Idaho Falls, ID 83415

bcc:

K. M. Davis, MS 3921

K. L. Falconer, MS 3921 A. E. Jantz, MS 3953

D. J. Kuhns, MS 3920 K. McNeel, MS 3428Km

R. A. Montgomery, MS 3427 C. R. Koshuta File

August 7, 1998

Mr. Brian R. Monson, Chief Hazardous Waste Permitting Bureau Idaho Division of Environmental Quality 1410 North Hilton Road, 3<sup>rd</sup> Floor Boise, ID 83706-1255

REQUEST FOR A "NO LONGER CONTAINED" IN DETERMINATION FOR TREATED GROUNDWATER FOR OU 1-07B - CRK-78-98

Reference: DEQ letter to C. R. Koshuta, "No Longer Contained In" Determination for Water Pumped

From TAN Production Wells, March 6, 1998

Dear Mr. Monson:

This letter is seeking a "no longer contained in" determination for the effluent water stream produced from planned, short-term, air stripper treatment unit operations for Operable Unit (OU) 1-07B at Test Area North (TAN). The air stripper will be part of a hydraulic containment/recirculation system to be operated for a period of one year in support of the in situ bioremediation (ISB) treatability study for OU 1-07B. The Idaho National Engineering and Environmental Laboratory (INEEL) requests a "no longer contained in" determination for the specific liquid effluent generated during air stripper treatment unit operations. The air stripper effluent will be reinjected into the contaminated zone of the aquifer at TAN. The liquid effluent is F001 listed waste in the groundwater which is treated by air stripping to remove volatile organic compounds (VOCs) to concentrations less than or equal to 5 parts per billion (ppb) trichloroethene (TCE). Verification samples will be taken at the discharge of the air stripper upon initial start-up and on a monthly basis thereafter. This schedule was established in the CERCLA document: Final Sampling and Analysis Test Plan for TAN Phase 0 Activities, 1-07A, and is included in the draft document Remedial Action Work Plan for TAN Final Groundwater Remediation Phase B. Sample analysis will be performed at the OU 1-07B Groundwater Treatment Facility (GWTF) laboratory using SW-846 Method 8260A.

In your letter dated March 6, 1998 (Reference 1), the Idaho Division of Environmental Quality (DEQ) determined that groundwater pumped from TAN Technical Support Facility production wells 1 and 2 "no longer contained in" a listed hazardous waste as long as TCE concentrations were at or below 30 ppb. The basis for choosing 30 ppb TCE (water does not exceed a risk factor of 1E-5, calculated using EPA guidelines) is discussed in that letter. Based on health data published by the EPA (52 FR 25700), INEEL continues to feel a concentration of 30 ppb TCE is protective of human health and the environment. INEEL is submitting this request at a concentration of 5 ppb because the project is expected to meet the lower concentration. This request is not meant to establish a precedent for future similar requests, nor is it intended to reflect on petitions already submitted to you.

Mr. Brian R. Monson August 7, 1998 CRK-78-98 Page 2

The "no longer contained in" determination will apply to one of the two proposed options that support the planned ISB treatability study field evaluation and that utilize groundwater extraction, air stripper treatment, and groundwater reinjection. The first option involves extraction from well TAN-29, air stripper treatment, and reinjection in well TAN-49. The second option involves extraction from either well TAN-28 or TAN-29, air stripper treatment, and reinjection at well TSF-05. Option one is our preferred option at this time. Attachment 1 provides the locations for the identified wells. More specific information concerning each of the options is provided below.

## ISB Hydraulic Containment System with Extraction from TAN-29 and Reinjection in TAN-49

The planned approach involves extraction of groundwater from well TAN-29, air stripper treatment, and reinjection of treated groundwater into well TAN-49, as shown in Attachment 2. The TCE concentrations at well TAN-29, as measured during annual groundwater monitoring, range from 920 to 1,600 ppb. The air stripper (AS-200) is designed to treat the water extracted from TAN-29 to below MCLs (5 ppb for TCE) for VOCs. During all operations air stripper effluent reinjected into well TAN-49 will be equal to or less than 5 ppb for TCE.

For this approach, the Idaho Division of Environmental Quality CERCLA Program requested that this "no longer contained in" request be submitted to support classification of well TAN-49 as a Class V injection well (IDAPA 37.03.03 and RCRA Section 3020). Idaho Department of Water Resources (IDWR) is currently reviewing a request from the Department of Energy, Idaho Operations Office (DOE-ID) for permission to temporarily use well TAN-49 for disposal of the water extracted from well TAN-29. IDWR requires a "no longer contained in" determination to grant temporary use of TAN-49.

# ISB Recirculation/Containment System with Extraction from TAN-28 or TAN-29 and Reinjection in TSF-05

The alternate approach involves extraction of groundwater from either well TAN 28 or TAN-29, air stripper treatment, and reinjection of treated groundwater into well TSF-05, as shown in Attachment 3. The TCE concentrations at the extraction wells, as measured during annual groundwater monitoring, range from 1,700 to 3,000 ppb for TAN-28 and from 920 to 1,600 ppb for TAN-29. The air stripper (AS-200) is designed to treat the water extracted from TAN-28 or TAN-29 to below MCLs (5 ppb for TCE) for VOCs. During all operations air stripper effluent reinjected into well TSF-05 will be below 5 ppb for TCE.

For this alternate approach, a "no longer contained in" determination will provide for a more cost effective design for the effluent piping from the air stripper to well TSF-05, since RCRA Subpart J requirements for secondary containment will not be necessary.

Under both of the options, well purge water generated during sampling in support of the ISB field evaluation and OU 1-07B groundwater monitoring will also be processed through the air stripper. This well purge water may contain TCE concentrations up to 10,000 ppb, but, after treatment through the air

Mr. Brian R. Monson August 7, 1998 CRK-78-98 Page 3

stripper unit, will not exceed 5 ppb. The volume of well purge water will depend on the number of wells sampled and the frequency of sampling. Based on annual sampling of up to 35 wells at 500 gallons per well for groundwater monitoring, and anticipated sampling during the ISB field evaluation, the volume of well purge water to be processed through the air stripper is estimated in the range of 20,000 to 50,000 gallons.

Finally, any personal protective equipment (PPE) or other secondary wastes that contact groundwater with TCE concentration exceeding 5 ppb will be managed as hazardous waste. Secondary waste that contacts groundwater with TCE concentration less than or equal to 5 ppb will be disposed of as non-hazardous waste in accordance with the *INEEL Reusable Property, Recyclable Material, and Waste Acceptance Criteria* (RRWAC), after completion of a hazardous waste determination for RCRA characteristic. This waste determination will be performed based on testing or application of process knowledge. Since this activity is part of a CERCLA remediation project, any spills or releases to the environment of water with more than 5 ppb TCE is addressed under the provisions of the CERCLA Health and Safety Plan for the project.

Current plans for OU 1-07B include operating the ISB hydraulic containment system or recirculation/containment system for a period of one year starting in October 1998. During this time frame the quantity of water processed through the air stripper and reinjected will depend on the processing rate through the system. Table 1 shows the estimated quantities of water to be reinjected resulting from different processing rates.

Table 1. Projected Processed Water Quantities for One Year

	10 Gallons	15 Gallons per	20 Gallons per	25 Gallons per	50 Gallons per
	per Minute	Minute	Minute	Minute	Minute
Gallons of Water Processed and Reinjected (In millions of gallons)	5.3	7.9	10.5	13.1	26.3

Evaluation of the two options is currently underway. As noted above, IDWR is currently reviewing a separate request for permission to use well TAN-49 as described in the planned option. The second option has been developed as a contingency that could be used if the planned option is not available. The response to this request, with respect to both options, is an important factor in supporting the evaluation of the two options by the three Agencies (DOE-ID, Environmental Protection Agency, and Idaho Division of Environmental Quality) involved with OU 1-07B project. The target date for Agency decision on which option to proceed with is August 14, 1998, therefore your expeditious review and approval of this request would be greatly appreciated and will help keep the remedial action activities for OU 1-07B on schedule.

Mr. Brian R. Monson August 7, 1998 CRK-78-98 Page 4

If you have any questions regarding this request, please feel free to cal! me at (208) 526-0078.

Sincerely

Cheryl R. Koshuta, Deputy Director

Environmental Affairs

AEJ:Inb

Attachments

cc: M. English, DEQ

K. E. Hain, DOE-ID, MS 1117 D. N. Rasch, DOE-ID, MS 1146 R. M. Shaw, DOE-ID, MS 1117

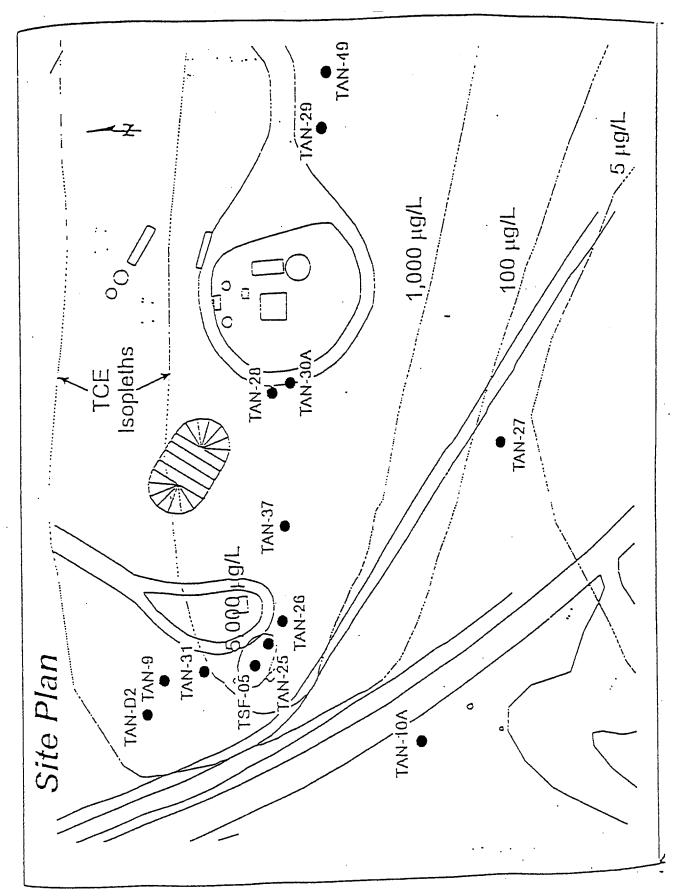


Figure 3-3. Enhanced ISB Field Evaluation Site Map.

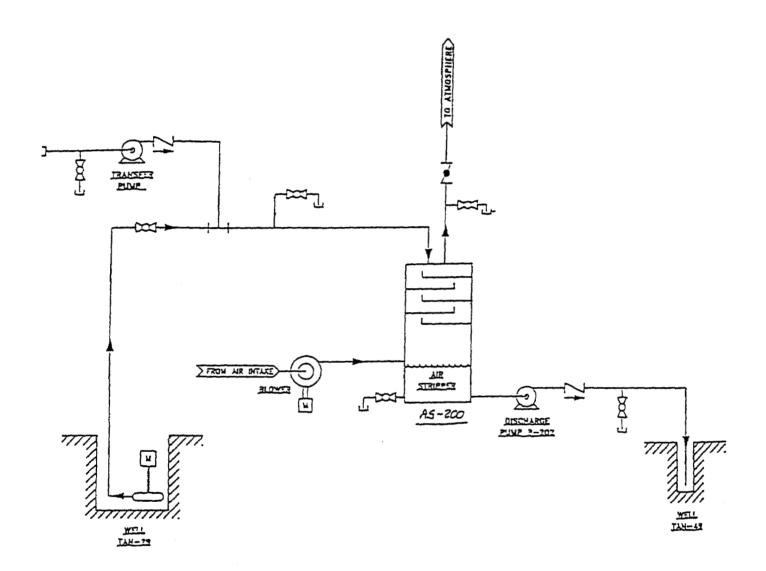
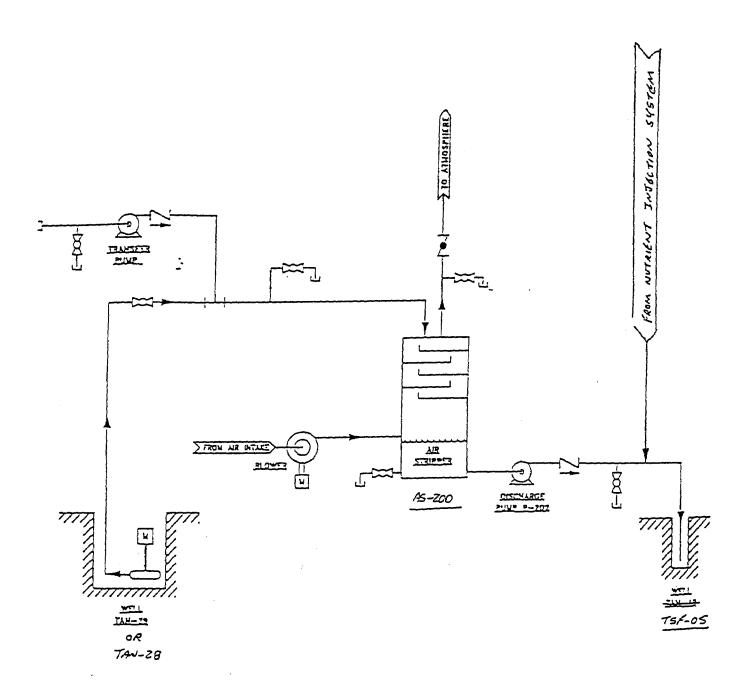


Figure 1-2. Process flow diagram for the ISB hydraulic containment system.



RECIRCULATION
Figure 1-2. Process flow diagram for the ISB hydroclic containment system.

## A-4. NLCID for Well Drilling and Development Water—Approved

Approval letter from B. R. Monson, DEQ, to D. L. Wessman, DOE-ID, dated November 2, 1999.

Request letter from O. L. Wessman, DOE-ID, to B. R. Monson, DEQ, dated October 18, 1999.

iome, Governor man Alired, Administrator



AL JANTE

1410 North Hilton . Boise, Idaho 83706-1255 . (208) 373-0502

November 2, 1999

Dave Wessman DOE - Idaho Operations Office 850 Energy Drive Idaho Falls, Idaho 83401-1563

Dear Mr. Wessman:

DISTR: J. ROTHERMEC

L. Acressa

D. KUHNS

G. MECHAM

J. BUKONSKI

JANTZ/11-11-99

AROC MS 3922

Re: October 18, 1999, Request for a "no-longer-contained-in" (NLCI) Determination for Well Drilling and Development Water for Operable Unit 1-07B on the Idaho National Engineering and Environmental Laboratory, EPA ID No. ID489008952

Based on a review of this NLCI determination request, DEQ will approve the request with the following conditions:

- This approval only pertains to the designated monitoring wells and only for the additional 1. drilling and development activities specified in the October 18, 1999, request.
- The media are handled in accordance with the requirements and conditions of the 2. February 9, 1999, approval letter for these monitoring wells.

If you have any questions, please contact Mark Jeffers at 208/373-0450.

Brian R. Monson

Hazardous Waste Program Manager

Don Rich

State Waste Management & Remediation Program Office

BRM/MHI/ra rebeloguecrulchaddltr

Jeff Hunt, EPA Region 10 cc:

Don Rasch, DOE-ID

INg COF



## Department of Energy

Idaho Operations Office 850 Energy Drive Idaho Falls, Idaho 83401-1563

October 18, 1999

J Pornerate L. Atterson

R. MONTGOMERY

O. KUNNS

G. MECHA

J. BUKOWSKI JANTZ / 10-21-99

Mr. Brian Monson, Hazardous Waste Program Manager State Waste Program Office Idaho Division of Environmental Quality 1410 N. Hilton, 3rd Floor Boise, Idaho 83706-1255

SUBJECT:

Request For A "No Longer Contained-In" Determination For Well Drilling And

Development Water, For Operable Unit 1-07b (OPE-EP&SA-171-99)

REFERENCES: (a) K. McNeel letter to B. R. Monson, January 21, 1999, Request for

No Longer Contained In" Determination for Well Drilling Water, Drill Cuttings.

and Secondary Containment Pads, KM-11-99

(b) B. Monson letter to D. N. Rasch, February 9, 1999, Response to KM-11-99

### Dear Mr. Monson:

Reference (a) requested a no longer contained-in determination (NLCID) for several waste streams associated with drilling wells for the OU 1-07B Groundwater CERCLA remedial action at Test Area North (TAN). That request included wells that had already been installed and wells that were anticipated at the time. DEQ approved the petition for specific wells and associated material in reference (b). During the summer of 1999 several wells were drilled and materials dispositioned in accordance with this approved NLCID. However, shortly after the wells were drilled it was determined that several of the wells require additional drilling to remove cave-in zones. Also it was determined that well development is required in all of the wells to remove drill cuttings that were generated during the initial drilling process. These wells, which were drilled during the summer of 1999 and which were identified in the previously approved NLCID. include TAN-47, TAN-50, TAN-51 (PNA-4), TAN-52 (PNA-2) and TAN-33.

This letter is to request DEQ concurrence to implement the already-approved NLCID (reference b) for additional drilling and initial development of these wells. All provisions of the alreadyapproved NLCID (references a and b) will be applied to media resulting from the well development and additional well drilling.

The water and drill cuttings generated during the drilling and development process will be handled in the same manner as identified for drilling water and drill cuttings in the alreadyapproved NLCID. Total water and drill cutting quantities generated from both the drilling this summer and the planned additional drilling and well development are expected to be within the quantities projected in reference (a). As requested by Mr. Jeffers, the trichloroethylene

concentrations measured in the drilling water last summer are provided in Enclosure 1. These concentrations were significantly below the 30 ppb NLCID level. Sample results for the additional drilling and well development are expected to also be significantly below the 30 ppb NLCID level.

The schedule time frame for performing the additional drilling and development is from late October through December 1999. This request was discussed with Mr. Mark Jeffers, DEQ, in an Operable Unit 1-07B conference call on September 30, 1999.

If you have any questions concerning this request, please call me at (208) 526-0082.

Sincerely,

David L. Wessman

J.f. Wersman

Environmental Compliance Specialist

**Enclosure** 

cc w/encl: R. E Bullock, DEQ, Boise, ID

Enclosure 1

NCLID Drilling Water Sample Results

Well Number	Sample	Sample	Date	Result <sup>1</sup>
	Number	Identification		TCE, µg/L
TAN-47	Sample 1	1WS20001VE	7/12/99	0.011 ( <mdl)< td=""></mdl)<>
	Sample 2	1WS20001VA		0.009 ( <mdl)< td=""></mdl)<>
TAN-50	Sample 1	1WS20201VA	7/27/99	0.039 ( <mdl)< td=""></mdl)<>
	Sample 2	1WS20201VE		0.049 ( <mdl)< td=""></mdl)<>
TAN-51 (PNA-4)	Sample 1	1WS20401VA	6/16/99	2.49
	Sample 2	1WS20401VE	•	2.19
TAN-52 (PNA-2)	Sample 1	1WS20601VA	6/29/99	0.11 ( <mdl)< td=""></mdl)<>
	Sample 2	1WS20601VE		0.26 ( <mdl)< td=""></mdl)<>
TAN-33	Sample I	1WS20801VA	8/9/99	0.462 ( <mdl)< td=""></mdl)<>
	Sample 2	1WS20801VE		0.449 ( <mdl)< td=""></mdl)<>

<sup>1 (&</sup>lt;MDL) - Denotes the estimated result was less than the minimum detection limit of 2µg/L.

## A-5. NLCID for NPTF Reinjected Groundwater— Approved

Generator Notification Statement—1-07B Generators to the New Pump and Treat Facility.

INEEL Waste Determination & Disposition Form (WDDF), "NPTF Reinjected Groundwater," dated February 14, 2001.

Approval letter from B.R. Monson, DEQ, to Dave Wessman, DOE-ID, dated February 5, 2001.

Request letter for a NLCID from .R. Guyman, BBWI, to B.R. Monson, DEQ, dated January 12, 2001.

Responding letter for DEQ's request for review of the continued remediation of groundwater, under a CERCLA corrective action, at TAN, from K.J. Daeher, IDWR, to C.S. Allred, DEQ, dated April 3, 2001.

### Generator Notification Statement 1-07B Generators to the New Pump and Treat Facility

Waste Area Group 1, Operable Unit 1-07, generates environmental media, groundwater, contaminated with F001 hazardous waste. The groundwater is generated through several activities:

- 1. Remedial activities where contaminated water is extracted from the aquifer, subjected to air stripping, and injected back into the aquifer via a Class V injection well.
- Purge water generated from sampling monitoring wells throughout the contaminated plurne. Purge water is fed into the air stripper unit where it is treated to reduce the VOC concentration and injected along with other remediated water.

The Idaho Department of Environmental Quality has stated that all aquifer water contaminated with >5 ppb trichloroethylene must be identified and managed as an F001 hazardous waste when it is "generated" through remediation or sampling activities. However, aquifer water that has been treated to meet the cumulative cancer risk standard of <1E-5 from VOCs "no longer contains" hazardous waste. Such waste is no longer hazardous waste and can be injected into a Class V injection well, but remains subject to Land Disposal Restrictions (LDRs) at the time of injection since it was a hazardous waste at the time of generation.

The CERCLA Record of Decision (ROD) governing this aquifer remediation project identifies 40 CFR 268 as requirements that are either applicable or relevant and appropriate. This document serves as the one-time notification from the waste generator to the waste treatment facility as required under 40 CFR 268.7.

268.7(a)(1) - The INEEL is identified by the state of Idaho as Hazardous Waste Generator ID4890008952.

268.7(a)(2) – Water generated from the Hot Spot and some portions of the Medial Zone does not meet the treatment standards found in 40 CFR 268.40. Water from other locations in the Medial Zone and from the entire Distal Zone does meet treatment standards. For the purpose of this one-time notification, it will be assumed that all hazardous waste generated from within the contaminated plume, and treated through the CERCLA remediation unit, the New Pump and Treat Facility, does not meet LDR treatment standards at the time generated.

The constituents of concern expected to be present under F001 are tetrachloroethylene and trichloroethylene. Other hazardous constituents identified under the F001 listing in 40 CFR 268.40 are not expected to be present. This has been demonstrated through chemical analysis. Analytical data are summarized in annual groundwater monitoring reports (see the reference).

These waste streams, as generated, meet the definition of wastewater since they each contain less than 1% total organic carbon and less than 1% total suspended solids.

Hazardous waste code F001 became restricted from Land Disposal on Nov. 8, 1986. These waste streams are not subject to any case-by-case extension, no-migration petition, national capacity variance or case-by-case capacity variance.

The current treatment standards for the expected hazardous constituents are:

Constituent	Treatment Standard (in parts per million, total)
Tetrachloroethylene	0.056
Trichloroethylene	0.054

This notification must be updated whenever additional underlying hazardous constituents are identified or when they are no longer found in the waste.

This notification, and any subsequent notifications, must be maintained in the 1-07 files for at least three years after water contaminated with F001 listed waste is sent to the New Pump And Treat Facility. If these waste streams are sent to any facility other than the New Pump and Treat Facility, an additional Notification must be generated, sent to the treatment/disposal facility, and placed into the 1-07 files.

### Reference:

J. Bukowski and R. Wells, "Fiscal Year 1998 Groundwater Monitoring Annual Report Test Area North Operable Unit 1-07B, INEEL/EXT-99-00011, Revision 0, March 1999.

## NEEL WASTE DETERMINATION & DISPOSITION FORM (WDDF)

33/03/2000

\$6. Q 435.39

Ş

☐ Yes ☐ No ☐ NA ☐ Yes ☒ No ☐ NA ☐ NA Furnishment is generated with the volatile organic compounds (VOCs) tribinorations, trans-dichloroethene, and letrachloroethene, and eletrachloroethene, the results of the forest own to be set of the model of the first own that the set of the model of the set of the set of the set of the set of the modeling showed that hazardous waste per the NLC chiefler. The issuiff of the modeling showed that hazardous waste per the NLC chiefler, the NPTF that Facility were modeled using SCREEN3 software. The issuifts of the modeling showed that hazardous waste per the NLC chiefler from the New Pump and Treat Facility were modeled using SCREEN3 software. The issuifts of the modeling showed that the modeling showed that maximum possible all emission rate for TCE is 0.082 kg/hr (0.18 lb/hr). As long as the influent concentration of TCE is less than the conservative design pass of 1.100 the maximum possible unit 1.078, DOEIID-10881, March 2000, rev. 1). n. PCBs: If Yes, provide concentrations | Yes | No | No 6-250 660 940 Secondary 8. Physical Description (check all that apply): Color: clear 📋 Solid 📋 Organic Liquid 🔯 Aqueous Liquid 📋 Studge 📋 Aarosol 📋 Gas Cylinder 📋 Multi.Laryered Process and Waste Description: (Attachment Included: 📗 Yes 🔯 No)
The waste is generaled when water beneath TAN is extracted from the aquifer. The water once extracted is a F001 listed waste. The extracted water is treated in the New 8. Waste Characterlas: Note: The waste characterialics may not be known at time of initial determination. If required for treatment or characterization, those parameters will be Phone Pager 1111-1 Type/elze: One Time Only S On-going actual & source) in composition table. PCBs Bulk Product? (40 CFR 761.62)? MARSHALL MARALLER MARKED E-Mail Material Profile Number: | Yes | No | NA | O. Sulfde > 500 mg/kg | Yes | No | NA | D. Cysnide > 250 mg/kg Sources used for process evaluation (e.g. MSDS, operational logs, procedures, analyses): Sample Analysis and cumulative risk calculations SECTION I: PROCESS KNOWLEDGE EVALUATION (Completed by the generator with assistance from the Facility Representative) if applicable: Container #: LIKINO Cleanup/Stabilization Activities 3. Were any waste minimization activities a part of this process: 🚫 Yes 📋 No. (if Yes, provide description or reference.) INEEL P2 Plan, D0E/ID-1033(00) Charge #: 3XNCC4K80 Name AND ON DIA 3921 Technical Specialist: 6-4773 6265 4142 Independent Ares: TAN Contact: Solids Z ☐ Routine operations Phone | Pager t. Wasie Generation Location: Facility: New Pump Building/Room: 1611 fonelson 6-3093 NPTF Rainjacted Groundwater snydde - Existing ☐ Anticipated Liquids 5. Other generation information: ADDF Number (Optional): Dale Smyder Lee Netson General Instructions: Waste Stream Name: Waste Stream Confacts dentified at a later date. 4. Generation Status: Name A scilly Rep .: Generator: Contact:

# NEEL WASTE DETERMINATION & DISPOSITION FORM (WDDF)

435.39 03/03/2000 Rev. 04

TYRE NO UNA TY8. MINO UNA Yes KINO | NA TY68 No DNA criterion Was F1 but has been treated to meet NLCI citerion Was F1 but has been treated to meet NLCI citerion Was F1 but has been treated to meet NLCI criterion Was F1 but has been treated to meet NLC! SECTION II: PROBABLE WASTE TYPE: (Completed by the Facility Representative and used to assign waste technical specialist and for appropriate management until final waste determinetion is made.) IIO Paed OII S Other - Describe: Reinjected groundwater that meets NLCI criterion Material Profile Number: ☐ Yes ☒ No ☐ NA ☐ Radiosctive ☐ Yes ☒ No ☐ NA ☐ L. Halogens (Cl. F. Br) r. Treatment Residue ☐ Recyclable: ☐ Non Radioactive Lead (>99+ % Lead) ☐ Lead Batteries ☐ Silver ☐ RCRA Scrap metal ☐ Other - Describe: Used as a Solvant? (Y/N) Conditional Industrial . **>** ÷ > > t. Radiosctive s. Explosive q. Oxidizer Analysis (if consittuent is <1%, use mg/kg or mg/L, or PK TSCA dd dq q g gd × TYES No | NA No ⊠ NA 8 ٩ 8 Ç Ç Ø Based on evaluation of the process and available data the waste type indicated is (check all that apply): Non-conditional industrial Radiosctive Only From 8 0 0 0 0 11. Waste Composition: (Must total 100%). Attachment Included: 🖂 Yes 🗌 No 📋 NA ☐ Yes ☒ No ☐ NA I. RCRA Debris (>80 mm)
(2.50% by visual Inspection) or non-RCRA Rubbie
☐ Yes ☒ No ☐ NA m. Pyrophoric (Air Reactive) | S Yes | No | NA | K. Free liquids: If Yes, quantity | Yes | S No | NA | K. Pree liquids: If Yes, quantity | Yes | S No | NA | Yes CAS No. 7732-18-5 78-01-8 158-80-5 158-59-2 127-18-4 NPTF Reinjected Groundwater ☐ Lab Pack Mked Constituent Indicated Waste Codes: 114 d. Is total organic carbon <1% e. Fuming Acid/Acid Gases Pyrophoric (Air Reactive) Waste Stream Name: Material Exchange rans-Dichloroethene ☐ Hazardous Only cis-Dichloroethene etrachloroethene g. Water Reactive **Frichloroethene** 

435.38 03/03/2000 Rev. 04

INEEL WASTE DETERMINATION & DISPOSITION FORM (WDDF)

Waste Stream Name: NPTF Reinjected Groundwater

Material Profile Number:

I certify that the information in Section I of this form and the applicable attachments are fully disclosed. A good faith effort has been put forward to acquire and verify the information.
Willful or deliberate omissions have not been made, and all known and suspected hazards have, to the best of my knowledge, been identified. The WGS Facility Representative, based on sinformation provided, has assigned a probable waste type in Section II. CERTIFICATION

Dale Snyder WGS Facility Representative Name Typed/Printed Les Neison Generalor Name Typed/Printed

# INEEL WASTE DETERMINATION & DISPOSITION FORM (WDDF)

Does the waste require evaluation in accordance with 40 CFR 268.48? 🗋 Yes 🖒 No (ii Yes, Identify UHCs.) UHCs. NA Attachment Included: 📋 Yes 🖪 No 3. Is waste excluded from regulation under 40 CFR 281.47 □ Yes □ No II Yes, Regulatory citation:
4. Is waste subject to 40 CFR 288 regulations? □ Yes □ No II Yes, is the waste a: □ Waste Water or □ Non Wastewater.

Is there a specified method of treatment? □ Yes □ No □ Yes, list the specified method:

5. Is waste fished in Subpart D of 40 CFR 2617 □ Yes □ No (If Yes, provide waste codes, regulated hazardous constituent(s), and an explanation of determination.)

Attachment included: □ Yes □ No Codes: 8. Is waste characteristic per Subpart C of 40 CFR 2617 📋 Yes. FNo (If Yes, provide waste codes, regulatory subcelegory, and an explanation of determination.) Attachment included: 🔲 Yes 🔲 No. Codes: E S Immediately Prior to Shipment: [] Yes 7. If hazardous, is the waste excluded for recycling in accordance with 40 CFR 261.2(e)(1)? | Yes | PNo 11 Yes, regulatory Citation: 9. Is waste TSCA regulated for either of the following? PCBs: Tyee CTNo Asbestos: Tyes CTNo Will verification be performed on this waste? The The IT was, describe the verification to be performed. SECTION III WASTE DETERMINATION AND DISPOSITION (Completed by the WGS Technical Specialist) 8. Is the waste mixed or low level? [] Yes [] No (If Yes, include attachment with Isotopic Information.) 1. Is this a solid waste (per 40 CFH 261.2)? The INo (If No, attach regulatory cliation) C. Disposition and Data Gap Evaluation: (Attachment included: 🖸 Yes 📋 No) D. Verification requirements: (Attachments included: . Yes . 700) At Initial Storage Location: Tes Tho 2. Is this a Hazardoue Waste (per 40 CFR 281.3)? The Tho B. Evaluation of Underlying Hazardous Constituents (UHCs) 2. What is the verification frequency? A. Weste Determination 435.39 03/03/2000 Rev. 04

# INEEL WASTE DETERMINATION & DISPOSITION FORM (WDDF)

E. Packaging and Transportation	Paguirements (to be comple	Mad by Bo T. C.		
	and Heresdone Metadone Company	ed by Parij.	ly if wastee are to be transported	
9 Recommended Destroites	I NOTE WATERIAL TO THE TOO	If Yes: DOT Primary Hazard:	DOT Subsit	DOT Subsidiary Hazard;
2 Destruction of the second of				
Oliver of the Party of the Part	, Hazard Class, DOT ID #. PO.			
5. If containers are already generated	ial shipping conditions, etc.): / genarated, are they packaged correctly	at shipping conditions, etc.); generated, are they packaged correctly for the DOT hazard class?    Yes.    No. 18 not have contained controlled.	I No list contained and in the	
			in the constitution in the contract of	
Packaging & Transportation Name Typed/Printed	ckeging & Transportation Name Typed/Printed		Packaging & Transportation Signature	Date
Summary of Waste Defermination:   Hazardous (see codes listed above)	Hazardous (see codes issed above)	Mixed Low-Lavel (see codes listed above)	Conditional Industrial	(Hor (describe)
		CERTIFICATIONS		mate NUCI CATATER
i certify that the information in Section Information. Willful or deliberate ornis	in III of this form and the applica issions have not been made, ar	I certify that the information in Section fil of this form and the applicable attachments are fully disclosed and accurate. A good faith effort has been put forward to acquire and verify the information. Willful or deliberate ornissions have not been made, and all known and suspected hazards have, to the best of my knowledge, been identified.	ccurate. A good faith effort has be	en put forward to acquire and verify the identitied.
MAN 511 46 L parties	hay that L. O. M.	Mark	1/26	10-21-2
TALL LABORATE	Printed		WGS Technical Specialist	Date
WGS Independent	L Reviewer Name			3-14-0
Typed/Printed	Printed	•	WGS Independent Reviewer Signature	Date
Low Level Waste Hazardous Waste Del Typed/Printed	ardous Waste Determination Review Name Typed/Printed	Low Level Waste	Low Lavel Waste Hazardous Waste Delemination Review	w Date
Additional Narrative Information (As Needed):	leaded):			
Water will be proce	7	to neet drinking water standards for	The state of the s	- - -
3 774 /	weste will me be	, , , , , , , , , , , , , , , , , , ,		racionactides
				•

Therefore, this waste will not be considered Low Level Wooshe,

A-5-7

## Attachment 1: Concentration of radionuclides found in water treated through the NPTF

Water treated through the NPTF will typically be extracted from wells TAN-38, TAN-39, and TAN-40. The concentration of radionuclides found in these wells are listed in Table 1-1. Treatment and disposal of water extracted from these wells and treated through the NPTF has been discussed with the Department of Energy, State of Idaho Department of Environmental Quality and the Environmental Protection Agency and is documented in the associated record of decision.

Table 1-1. Concentration of radionuclides in groundwater extraction wells associated with the NPTF.\*

Well	Sr-90 (pCi/L)	H-3 (pCi/L)
TAN-38	<0.4	5390
TAN-39	<0.6	6000
TAN-40	<0.7	6000

\*Fiscal Year 1998 Groundwater Monitoring Annual Report Test Area North Operable Unit 1-07B, INEEL/EXT-99-00011, Rev. 0, March 1999.

### Attachment 2

EPA Codes, Constituents and CAS numbers associated with wastewater effluent from the NPTF

Groundwater found in the aquifer beneath TAN contains the volatile organic compounds (VOCs) trichloroethene, cis-dichloroethene, trans-dichloroethene, and tetrachloroethene. Once groundwater is extracted from the contaminated portions of the aquifer and brought to the surface it is a F001 listed waste. The extracted water will be treated in the NPTF to remove the VOCs to less than the applicable maximum contaminant level (MCL). After treatment, the NPTF effluent water will no longer contain hazardous constituents. A formal no longer contained in criterion has been requested by INEEL and approved by the State of Idaho Department of Environmental Quality. The contaminants associated with the extracted water are listed in Table 2-2.

Table 2-2. Contaminants and CAS numbers associated with NPTF influent water.

Contaminant	CAS Number
Trichloroethene	79-01-6
cis-Dichloroethene	156-59-2
trans-Dichloroethene	156-60-5
Tetrachloroethene	127-18-4



10:07AM ENVIR AFFAIRS

DEPARTMENT OF ENVIRONMENTAL QUALITY

1410 Morth Hitten + Boise, Iceho \$3766-1256 • (209) 373-0802

February 5, 2001

Dave Wessman DOE - Idaho Operations Office 850 Energy Drive Idaho Falls, Idaho 83401 - 1563 cen 18243 P.1/1 DE ROTHBRINEL REC: 2/9/41 L . HELDON

D. Kunnos /Buza

August 8, 2000, and January 12, 2001, Request of a "No Longer Contained-In" Determination for Operable Unit 1-078 Remediated Water at the INEEL, EPA ID No. ID4890008952.

Dear Mr. Wessman:

Based on DEQ's review of DOE's January 12, 2001, letter, it appears DOE has adequately addressed the concerns of DEQ's October 26, 2000, letter. Therefore, the DEQ is hereby approving a No Longer Contained In determination for remediation and purge water at the New Pump and Treat Facility.

This approval is only valid for the TAN-38, TAN-39 and TAN-40 extraction wells. Future extraction wells will not be covered as stated in the last sentence of the second paragraph on Page 2. Any additional extraction wells will require DEQ approval prior to inclusion into the pumping strategy.

If you have any questions or comments concerning this please contact Mark Jeffers at (208) 373-0450.

Sincerely,

Brian R. Monson

Hazardous Waste Program Manager

Waste Management & Remediation Division

BRM/MHJ:tg c\\_\bob\DEE\pic\nd-11-00

Jeff Hunt, EPA Region 10 Ron Guymon, BBWI

Rensay Owen, DEQ-Idaho Falls

Source File (INg)

Joe Rothermai, BBWI Mark Jeffers, DEO Kathleen Trever, Oversight

COF



RECIEWED 1/30/02

P.O. Box 1625 2525 North Fremont Ave Idaho Falls, Idaho 83415 (208) 526-0111

January 12, 2001

CCN 017092

Mr. Brian R. Monson
State Waste Program Office
Department of Environmental Quality
1410 North Hilton, Third Floor
Boise, ID 83706-1225

REQUEST FOR A "NO LONGER CONTAINED-IN" DETERMINATION FOR OPERABLE UNIT 1-07B REMEDIATED WATER

References: (a)

- R. H. Guymon letter to B. R. Monson, CCN 011668, Request for a "No Longer Contained-In" Determination for Operable Unit 1-07B Remediated Water, October 26, 2000
- (b) B. R. Monson letter to D. L. Wessman, August 8, 2000, Request for a No Longer Contained-In (NCLI) Determination Operable Unit 1-07B Remidiated Water, at the INEEL, EPA ID No. ID4890008952, October 26, 2000

### Dear Mr. Monson:

The Idaho National Engineering and Environmental Laboratory (INEEL) is requesting a No Longer Contained-In (NLCI) determination for water, contaminated with trichloroethene (TCE), remediated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Operable Unit (OU) 1-07B Record of Decision (ROD). This determination will apply to water treated through the New Pump and Treat Facility (NPTF) prior to injection back to the Snake River Plain Aquifer. The INEEL first submitted this request in Reference a. This second request incorporates Department of Environmental Quality (DEQ) comments made in Reference b.

### Background

Groundwater at Test Area North (TAN) that is contaminated with TCE must be managed as a listed waste (F001) because of the "contained in" policy. As a result, pump-and-treat units operating within OU 1-07B require a NLCI determination. A new pump-and-treat unit, the NPTF, is being constructed to remediate the medial zone of the contaminated groundwater plume and a NLCI determination is requested for water processed in the NPTF. The NPTF is expected to be operational and remediating water in 2001.

### Volume of Waste

The NPTF is expected to treat approximately 150 gallons of water per minute (gpm), or approximately 6.7 million gallons per month. The system may treat up to a maximum of 250 gpm for short periods (11.2 million gallons per month).

### Waste Characterization

Groundwater to be treated in the NPTF is contaminated primarily with TCE, with lower concentrations of tetrachloroethene (PCE) and cis- and trans-dichloroethene (c-DCE and t-DCE). The presence of vinyl chloride is possible, but unlikely. A full characterization of the water is presented in the Annual Groundwater Monitoring Report and in the Well Characterization Evaluation Report which contains data from pumping tests performed on the NPTF extraction wells at the proposed pumping rates.

The NPTF will treat water extracted from three existing wells, TAN-38, TAN-39, and TAN-40. Purge water from other wells within the contaminated plume will also be treated through the NPTF. Other wastewater that may be treated using the NPTF include sample residues returned after analysis. No water that has been altered by adding preservatives or other chemicals will be treated at the NPTF. In the event additional extraction wells are added in the future, DEQ will be notified. It is requested that any future extraction wells constructed for the NPTF be covered by this NLCI request.

### NLCI Criteria

Groundwater processed in the NPTF will be treated in an air stripper to reduce the total concentration of detected volatile organic compounds (VOCs) before it is reinjected into the aquifer. The concentration of VOCs in reinjected water must result in a cumulative risk of \$1E-5.

Sampling And Analysis

Upon facility startup effluent from the NPTF will be sampled for VOCs. The cumulative risk of the NPTF effluent will be calculated for the detected VOCs using EPA Region 9 guidance and the results of the calculation will be sent to the DEQ. Subsequently, treated water will be sampled monthly. NPTF effluent sampling results and associated risk calculations will be documented to the FFA/CO agencies in the quarterly operations reports for the Test Area North final groundwater remediation activities.

### Summary

The INEEL, is requesting a NLCI determination for ground water treated through the NPTF. The requested NLCI criterion is ≤1E-5 cumulative risk from VOCs. The NPTF is expected to treat less than 11.2 million gallons per month. Treated water will be sampled on a monthly basis and risk calculations will be completed to confirm that the criterion of ≤1E-5 cumulative risk is met. In the unlikely event that treated water does not meet the respected NLCI criterion, changes to existing project scope, schedule, and budget will be required in order to modify the NPTF. If modifications to the NPTF become necessary, implementation of other activities currently planned for the OU 1-07B project would be affected.

Should you require additional information, please feel free to contact Mr. Bob Montgomery, of my staff, at (208) 526-9339 or Mr. Dave Wessman, DOE-ID, at (208) 526-0082.

Sincercly,

Ronald H. Guymon, Director Environmental Affairs

RAM:kd

ce: R. E. Bullock, DEQ
M. Jeffers, DEQ
L. A. Schike, BBWI, MS 3528
R. Mark Shaw, DOE-ID, MS 1117
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J. E. Rugg, MS 3428
J. J. Saye, MS 3428 G. MECHAM J. P. Shea, MS 3915

Correspondence Control Center, MS 3600 R. H. Guymon File (RHG-06-01)

Uniform File Code: 6104 ENV1-A

Disposition Authority: <u>EA-CFL-1</u>

Retention Schedule: Destroy 75 years after the termination of the applicable FFA & CO. DOE shall notify the EPA at least 90 calendar days prior to the destruction of these FPA DOE shall relinquish custody of the records, and upon request by the EPA, DOE shall relinquish custody of the records or copies of the records to the EPA.



### State of Idaho

## DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, Bolse, ID 83706 - P.O. Box 81720, Bolse, ID 83720-0098 Phone: (208) 327-7900 Fax: (208) 327-7866 Web Site: www.idwz.state.id.us

DULK KENDTRORNE

April 3, 2001

EARL J. DRESSER

C. Stephen Allred, Director Department of Environmental Quality 1410 North Hilton Drive Boise, ID 83706

Re: Injection of amendments and treated ground water into the Eastern Snake Plain Aquifer
("ESPA") in support of remedial actions at Test Area North ("TAN") OU 1-07B, INEEL

Dear Mar Allred:

This letter responds to the request from the Idaho Department of Environmental Quality ("IDEQ") for review of the continued remediation of ground water, under a CERCLA corrective action, at the TAN Facility on the INEEL. As a result of our review of the Draft Proposed Plan for Operable Unit 1-07B ("Proposed Plan") together with discussions with IDEQ personnel, the Idaho Department of Water Resources ("IDWR") has made the determinations described below. These determinations were made under the Waste Disposal and Injection Well provision of Chapter 39, Title 42, Idaho Code; IDWR's primacy responsibilities for the Underground Injection Control program with EPA; and in accordance with the Idaho Ground Water Quality Rule (IDAPA 16.01.11).

### Extended Use of Remediation Wells for Injection of Amendments

In accordance with IDAPA 37.03.03.045.01, IDWR agrees to extending the use of remediation wells in the Hot Spot and Medial Zone for the injection of amendments to support in-situ bioremediation ("ISB") activities in accordance with the provisions of the Proposed Plan. IDWR and IDEQ concur that based on analytical simulations, the use of these wells for the extended injection of amendments in accordance with the Proposed Plan will not impact future beneficial uses of the ground water.

### Extended Use of the New Injection Well for the New Proposed Treatment Facility ("NPTF")

IDWR and IDEQ concur that the proposed construction and use of a new injection well to re-inject treated water from the NPTF is needed to support continued remedial activities if the following criteria are met:

Mr. C. Stephen Allred April 3, 2001 Page 2 of 3

- Chemical contaminants will not be injected into the ESPA at concentrations
  greater than existing concentrations in the receiving aquifer or the MCL for each
  chemical contaminant in accordance with Rule \$0.02.a.i. of the Waste Disposal
  and Injection Well Rules (IDAPA 37.03.03);
- Contaminants of radiomuclides to be re-injected into the ESPA, which remain in
  the treated water from the NPTF, will not exceed the MCL for these constituents;
- Purge water and/or wall construction water, which may be above MCL for chamical contaminants and/or radiomaclides, will be blended over time into the NPTF flow stream such that MCLs for these constituents will not be exceeded at the point of injection;
- Should radionuclides increase significantly in the monitoring wells immediately
  upgradient of the NPTF extraction well(s), the frequency of the sampling cycle of
  the monitoring wells will be re-evaluated and increased to determine potential
  modifications to use of the re-injection well;
- DOE will monitor for radiomuclides at the injection port on a monthly basis, and if
  radiomuclides are detected at 75 percent of MCL at the injection port, monitoring
  well TAN 48 will be sampled monthly and wells TAN 47 and TAN 50 will be
  sampled quarterly for a minimum of one year.

### Understanding of Remedial Action Requirements

- (1) This agreement for the extended use of remediation wells for the long-term injection of amendments to support remedial action activities, and the use of the new re-injection well to dispose of water extracted from Medial Zone extraction wells, is based on the understanding that DOE will continue to comply with the monitoring plan in accordance with the Record of Decision (ROD) and that concentrations of hazardous constituents and radiomiclides will not exceed MCLs beyond the remediation time frame as defined in the ROD (2095).
- (2) Institutional controls will be established by DOE around the plume boundary, as determined by the present 5µg/l isocontour, and will be extanded to account for an approximate 30 percent expansion along the leading edge of the plume to prevent potential exposure to current and future beneficial uses. These institutional controls shall remain in place for the duration of the remediation activities.

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- (3) IDEQ agrees to provide copies of pertinent ground water monitoring documents to IDWR related to injectate sampling and associated monitoring wells.
- (4) It has been determined that the proposed injection well will be classified as a Class V well. This determination is based on the premise that no hazardous waste or radioactive waste as defined in 40 CFR, Part 261, or 40 CFR, Part 20, respectively, will be placed into the injection well.

This response is based on information DOE has submitted in accordance with the criteria set forth in the INEEL Federal Facilities Agreement and Consent Order and CERCLA, 42.U.S.C. 9621 (e)(I). Under these criteria, DOE's uses of injection wells associated with the aforementioned remedial activities are exempt from the procedural requirements of the Idaho Waste Disposal and Injection Well Program and the Underground Injection Control Program, for which Idaho has been granted primacy by the EPA. This agreement recognizes that provided DOE astisfies the conditions stated herein, DOE will have satisfied all applicable, relevant, and appropriate standards, requirements, criteria, and limitations which would have been required under the Idaho Waste Disposal and Injection Well Program and Underground Injection Control Program.

Karl J. Dreber Director

b: [W. Pierre, EPA Region 10 K. Hein, DOE - ID D. Nygard, DEQ - WMRD M. Jeffers, DEQ - Tech. Services S. Van Hoff, IDWR - UIC

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